

Having no organ, Prof. Thomas played the violin and Edward Tolton the bass viol. For the day and time this was a happy combination. In 1870 Prof. Thomas moved back to Salt Lake City where he became noted as author and composer of hymns and music. He was the leader of the Temple Choir for more than thirty years. His successor in Beaver was Barnham Blake Messinger. He was a highly cultured person, retiring in his nature, but devoted to his calling and a great friend of the young people.

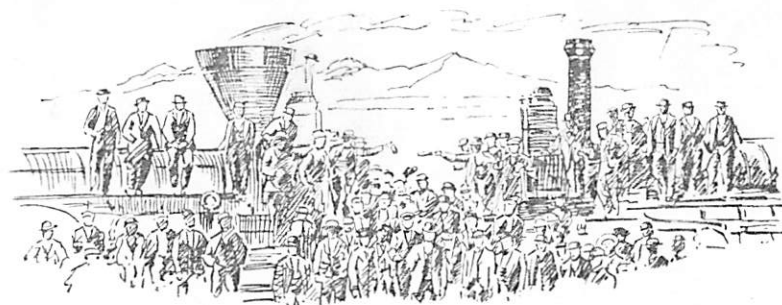
At the retirement of Messinger came William Robinson, a convert from England who was a silvertongued, highly cultured gentleman. What he lacked in technique he made up in spirituality. He was greatly beloved by members of the choir who served with him. Associated with him were Robert Stoney and Prof. W. G. Bickley. The latter was a musician of high repute, author and composer of songs and hymns. At this time, a small organ was purchased and singing was made easier. The above trio held the board from 1875 to 1905. Robert Stoney did not assume the title of professor. He was, however, an energetic worker as a leader in choir and church work, and raised the standard of the choir to that of any in southern Utah. He was also the leader of Beaver's first brass band.

Because of the high standard of the group, they were invited by President Brigham Young to participate at the dedicatory services of the St. George Temple in April 1877. At dawn the choir was escorted to the top of the temple and as the sun came over the mountains the band played "The Star Spangled Banner," followed by the choir singing "The St. George Temple," a song especially composed by Prof. Bickley. Duckworth Grimshaw was still an enthusiastic member of the group.

In the latter part of 1900 another organ was purchased, a Reed and Hamlin. It was quite an improvement over the small one they had used for so long. Isaiah Taylor worked the bellows. As time went on, younger members were chosen to take the places of older members who wished to be released. As in other Mormon communities, the choir provided the choral music for all holiday programs and stake conferences.

—Monuments to Courage

Duckworth Grimshaw's life was indeed one of service and devotion to his Church and his community. He taught his children to do right, and set them a good example. May Grimshaw Jensen, his daughter, considered him to be the most grateful man she had ever known, for no matter what poverty or hard luck came to him, he could always find something to be thankful for.



First Transcontinental Railroad in Picture and Story



THE LAST tie has been laid; the last rail is placed in position, and the last spike driven, which binds the Atlantic and Pacific oceans with an iron band. The electric flash has borne the tidings to the world and it now devolves upon us, the favored eye-witnesses of the momentous feat, to enter our record of the facts. The meridian hour has come and on the expansive and lofty plateau, at the summit of the Promontory, a scene is disclosed in the conception of which every exultant element of humanity is revived. Never before has this continent disclosed anything bearing comparison with it. The massive oaken-hued trains of the Central lie upon their iron path, confronted by the elegant coaches of the Union Pacific. Thousands of throbbing hearts impulsively beat to the motion of the trains as the front locomotives of each company led on majestically up to the very verge of the narrow break between the lines, where, in a few moments, was to be consummated the nuptial rites uniting the gorgeous east and the imperial west with the indissoluble seal of Inter-oceanic commerce . . .

Thus the *Deseret News* of May 12, 1869, announced the finale of one of the greatest accomplishments as yet conceived and per-

formed by mankind. At one and the same time, the great event marked the end of one era and the beginning of another, for no longer would slow-moving wagons pulled by lumbering oxen need to travel the weary, mountainous trail to carry pioneers and their endless burdens westward. Strong and determined men — sometimes lacking the money and brawn to carry on — had nevertheless hewed the iron road over paths marked by their own sweat and blood. Hundreds of Latter-day Saints trained through years of unceasing toil to be master laborers; thousand of Chinese, Irishmen, Scandinavians and Negroes working for near starvation wages, completed the gigantic task, paving the way for phenomenal growth in the United States of America. It is an exciting story!

THE ENABLING ACT

Soon after the end of the Mexican War and the discovery of gold in California, the linking of the populous eastern section of the United States with the sparsely settled western territories by means of a transcontinental railroad became an objective of political as well as economic importance. In Washington in the 1850's it was realized that separatist tendencies would inevitably develop between the East and the West if economic and cultural bonds depended only on covered wagons and "round the Horn" sailing ships; the distant sections must be knit together by the most efficient transportation system thus far known.

In 1858 President Abraham Lincoln visited Council Bluffs where he met General Grenville M. Dodge, who had just returned from making a survey for a railroad west of the Missouri River. Later, General Dodge wrote: "Lincoln had heard of my return from the survey, and he sat with me on the porch and drew out all the facts I had obtained in my survey, and naturally my opinion as to the route for a railroad west . . . In 1863 I received a dispatch from General Grant to proceed to Washington and report to the President. I soon ascertained that I was sent for for a consultation in regard to the Eastern terminus of the Union Pacific Railroad. He remembered the conversation with me on the porch of the Pacific House, and under the law he was to determine the Eastern Terminus."

The stormy years during which the southern states seceded from the Union had double effect on the project of a transcontinental railway line by delaying its completion while demonstrating its necessity. Late in 1861 Congress began serious consideration of the Enabling Act, and in 1862 passed a railroad law which President Lincoln signed on July 1st, entitled, "An Act to Aid in the Construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean, and to secure to the government the use of the same for postal, military and



President Lincoln and General Dodge at Omaha.

other purposes." Under this law the Union Pacific and the Central Pacific railroads were built.

Known as the *Union Pacific Railroad Company*, the new corporation was "authorized and empowered to lay out, locate, construct, furnish, maintain, and enjoy a continuous railroad and telegraph, with the appurtenances, from a point on the 100th meridian of longitude west from Greenwich, between the south margin of the valley of the Republican River and the north margin of the valley of the Platte River, in the Territory of Nebraska, to the western boundary of Nevada Territory."

Under provisions of the Act, the Central Pacific Railroad was to build to the eastern boundaries of California and the Union Pacific to build westward to a juncture therewith. Later this was amended, authorizing the Central Pacific to build eastward until it met the Union Pacific. Although ten years were allowed to complete the roads, only about seven years were

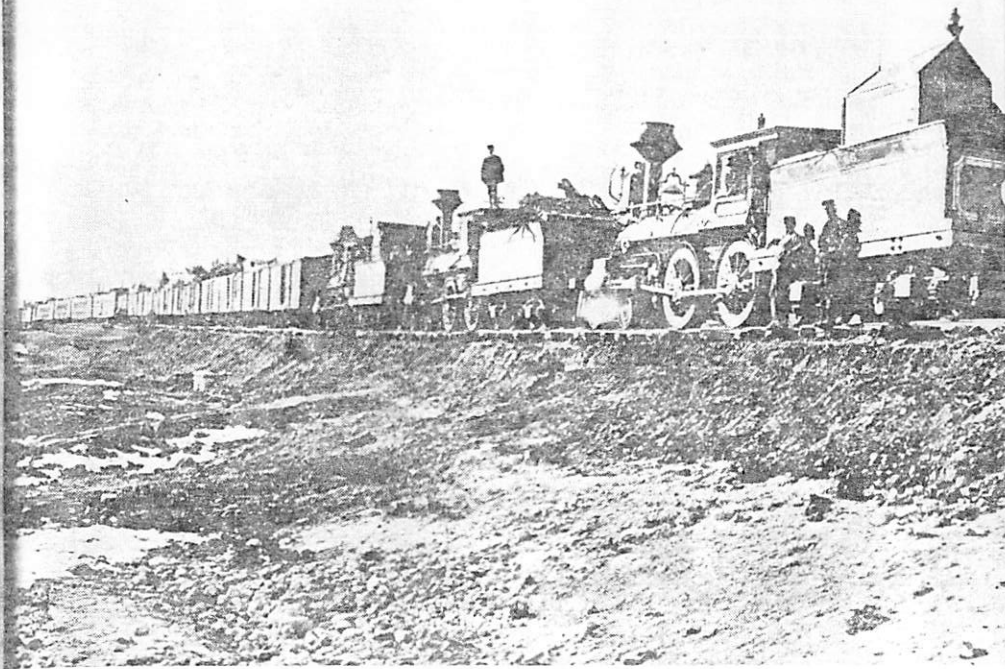
needed. The amended charters of the two roads provided that the President should designate the junction point, no specific junction having been fixed under the Act. Under several subsequent acts passed by Congress between 1862 and 1864, a subsidy of government bonds, payable in gold at six percent interest, was provided for each mile of railroad built, at the rate of \$16,000 per mile from the Missouri River to the base of the Rocky Mountains; \$48,000 per mile through the mountainous areas; \$32,000 per mile for the section between the Rocky Mountains and the Sierra Nevada, and \$32,000 per mile for that portion lying west of the Sierra to the banks of the Sacramento River. In addition to the subsidy, the same acts gave to each company building the road 20 sections (12,800) acres of the public lands for each mile of road built.

PRESIDENT LINCOLN'S MESSAGE

In compliance with the Senate resolution respecting points of commencement of the Pacific Railroad on the hundredth degree of west longitude, and of the branch road from the western boundary of Iowa to said hundredth degree of longitude, I transmit the accompanying report of the Secretary of the Interior; conveying the information called for. I deem it proper to add that on the 17th of Nov. an executive order was made on this subject, and delivered to the president of the Union Pacific Railroad, which fixed the point on the western boundary of the State of Iowa from which the company should construct their branch road to the hundredth degree of longitude, and declared it to be within the limits of the townships of Iowa, opposite Omaha. Since then the company has represented to me, that, upon actual surveys made, it has determined upon the precise point of departure of its said branch road from the Missouri River, and located the same as described in the accompanying report of the Secretary of the Interior, which point is within the limits designated in the order of Nov. . . . Inasmuch as that order is not on record in any of the departments and company desiring a more definite one, I have made an order of which a copy is herewith transmitted, to cause the same to be filed in the Department of the Interior.

(Signed) Abraham Lincoln

The order referred to is as follows: — In pursuance of the provisions of Sec. 19 of an act of Congress, entitled "An Act to Aid in the Construction of a Railroad and Telegraph line from the Missouri River to the Pacific," etc. authorizing the President to fix the point on the Western boundary of the State of Iowa from which the Pacific Railroad Company is



Construction train on Union Pacific in the early '60's.

authorized to construct upon the most direct practicable route, subject to the approval of the President of the United States, so as to form a connection with the line of said company at some point within the hundredth meridian of Longitude, I, Abraham Lincoln, President of the United States, upon application of said company, designate and establish such first above named point on the western boundary of Iowa east of and opposite Omaha, done at the city of Washington, this 7th day of March, 1864.

Abraham Lincoln

It is a well substantiated fact in the history of the west, that the pioneers of Utah were among the first projectors and proposers to the American Congress of a transcontinental railroad. At the first session of the Territorial Legislature, held in 1851-52 in Salt Lake City, memorials to Congress were adopted, praying for the construction of a national central railroad. Again, on the 31st of January, 1854, there was a movement of the people for a railroad. The citizens of Salt Lake City and surrounding country gathered en masse to make a grand demonstration in its favor.

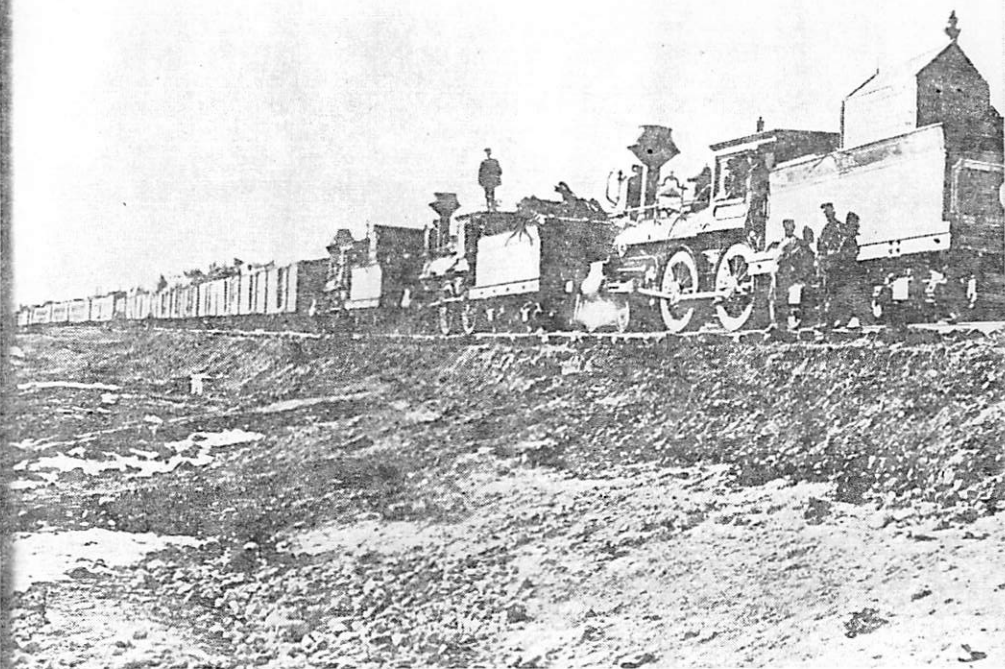
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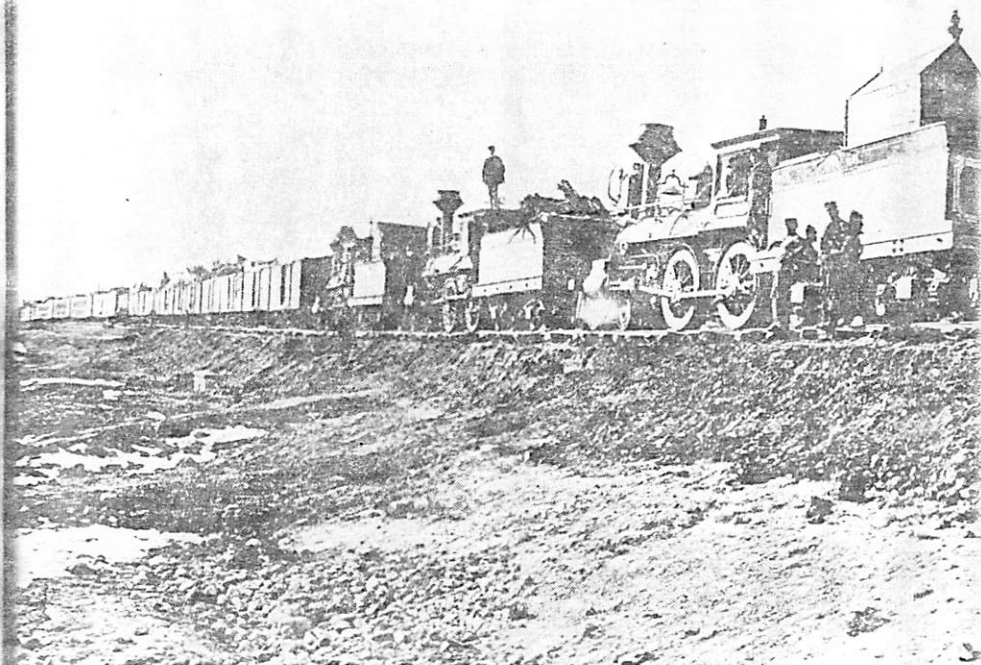
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The temper of the times, however, was to pave the way for routing of the line through Utah Territory. Three main paths had been proposed: the southern, the northern and the central. Running the line through the more level terrain of the south would have been the least expensive, but northerners feared such a trail would prejudice the west in favor of slavery. Conversely, the southerners feared a northern route would encourage more free states. No decision had been made when the Civil War commenced in 1861.

As early as 1848 *The Millennial Star* printed a report of two projected railway routes from Council Bluffs to the Pacific Ocean, as contemplated and described by Asa Whitney. The publication noted the account with lively concern, declaring that it was "fraught with interest to the Saints. It will not only pass near their locality, but ultimately facilitate the gathering, and lessen the expense of the same. It will open a fresh market for all the surplus produce of the Saints, and furnish employment to spare labourers and artisans. If it is accomplished, it will constitute a literal 'highway' for the ransomed of the Lord. In two or three days a journey from the Bluffs to the Salt Lake may be accomplished, which now occupies as many months."

Late in the fall of 1861 an ambitious young engineer by the name of Theodore D. Judah was sent from California to Washington by a syndicate that included Governor Leland Stanford, Collis P. Huntington, Mark Hopkins and Charles Crocker, all of Sacramento. Judah had earlier represented Pacific Coast rail interests in Washington, and was highly respected. He described the railroad he felt could be built up and over the Sierra Nevada Mountains, and congressmen were so interested they made him secretary of the House and Senate Select Committees for the Pacific Railroad. Most railroad historians give this intense young man credit for the terms of the original Pacific Railroad Act signed by Lincoln the following summer, and the war eliminated proponents of the southern route, greatly aiding Judah's proposition, and weighing the scales in favor of the central route.

CONSTRUCTION BEGINS

A formal organization of the Union Pacific Railroad was perfected at the meeting of the board on October 29, 1863, in New York City, when John A. Dix was chosen president, and as vice-president, Dr. Thomas C. Durant, who threw into this great national enterprise all of his constructive genius and his fortune. He was the master spirit back of the construction of the Union Pacific. Daring, adventurous, aggressive, a man of unlimited energy, he was ideally suited to accomplish this great work. In November, Durant sent Herbert M. Hoxie to Council



Laying Track 300 miles west of the Missouri River, on October 19, 1867.

Bluffs to hire workmen and publicize the ground-breaking that had been set for December. With as much conviviality as could be commandeered, the ceremony took place at Omaha on December 2nd. On that day, Brigham Young sent the following message to President Lincoln:

Let the hands of the honest be united to aid the great national improvement.

But only a small group attended the ceremonies; most of them were Indian women hired at the rate of 50¢ per day to help with the grading. Although Durant would be occupied during the following two years in an attempt to raise funds for the great project, actual construction remained almost at a standstill. The vice-president was unable to persuade Brig. Gen. Grenville M. Dodge, famous Civil War railroad builder to resign from the army and take charge of construction. On January 1, 1864, President Dix appointed Peter Dey as chief engineer of the Union Pacific, and Colonel Silas Seymour as consulting engineer. In August of the next year, Seymour, General Dodge, government director Jesse Williams and geologist David Van Lennep traveled westward on a surveying trip through the Rockies. They hoped to locate deposits of coal, iron and copper, as well as rock for track ballast.



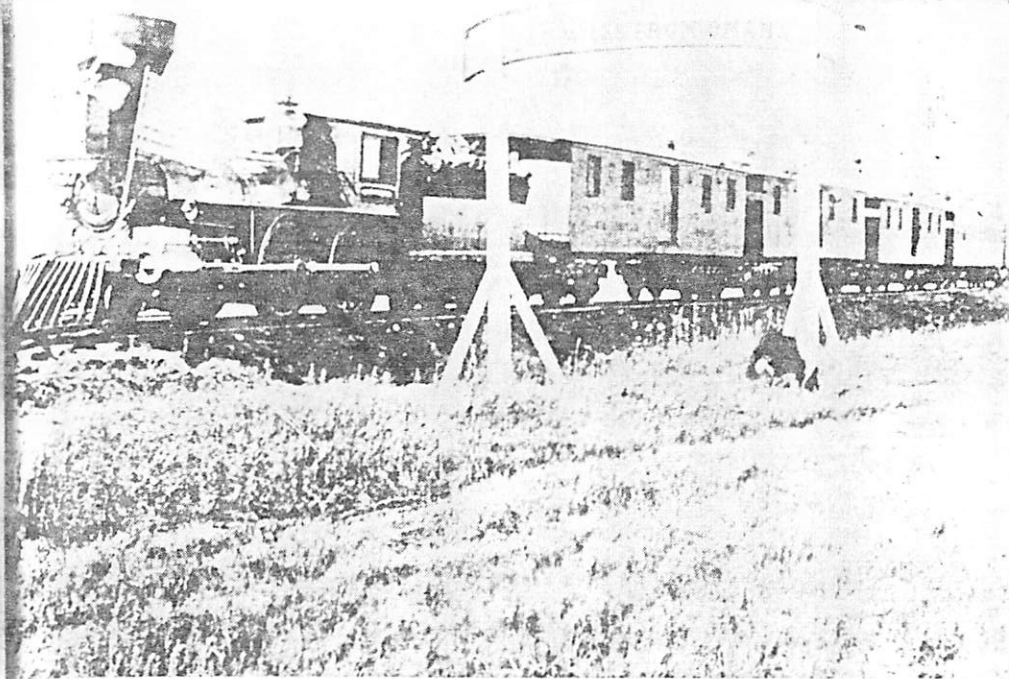
Immigrants did much of the hard work in building the transcontinental railroad.

Meanwhile, Durant was still worrying about finances. Substantial government loans, amounting in the aggregate to over \$60,000,000, and land grants along the right of way totaling 20,000,000 acres, did not prove sufficient inducements to attract private investors. It was obvious that the railroad could not hope to pay its expenses for many years, much less earn a profit for investors; yet without private investment to supplement the government grants, the railroad could not be built. The problem of obtaining investor participation was solved by Congressman Oakes Ames with a financing device called the Credit Mobilier of America, which he and his associates inaugurated in 1864. Essentially, the Credit Mobilier resembled its French prototype, founded twelve years earlier. It consisted of a corporation formed by the railroad's stockholders which operated as a construction company and paid itself largely in stocks and bonds of the Union Pacific Railroad. By congressional authorization the railroad was permitted to issue its own bonds, dollar for dollar, with the government's, but the railroad bonds took precedence. In effect, the government assumed all the risks of the enterprise.

But four years of warfare had unsettled business interests and interrupted the agricultural and manufacturing pursuits of the people. The whole south, which had previously been a very responsive source of money, was under devastation, and the people were prejudiced against most northern enterprises, especially the railroad. Northern economy was also in shambles because of the war, and the public was in no mood to spend its meager funds on a railroad through "wild Indian country."

Building materials were also at a minimum in the midwest. According to Geo. A. Crofutt's *New Overland Tourist and Pacific Coast Guide*: "For five hundred miles west of Omaha the country was bare of lumber save a limited supply of cottonwood on the islands in the Platte River, wholly unfit for railroad purposes. East of the river the same aspect was presented, so that the company were compelled to purchase ties cut in Michigan, Pennsylvania and New York, which cost, delivered at Omaha, \$2.50 per tie." (Some sources say \$4.50 and even \$10.00 per tie.) All supplies must come by rail from Des Moines, 140 miles away, or Boonville, the terminus of the Northwestern Railroad; or via the slower, uncertain river service which was closed in the winter.

In the face of these prohibitive costs, the only alternative was to find some way in which the plentiful cottonwoods could be used. The method finally adopted consisted of soaking the ties in zinc chloride. These, when dried and interspersed with a few hardwood ties, supported the Union Pacific rails across the prairie. A year after the driving of the Golden Spike, however, 300,000 of the softwood ties had to be replaced.



100th Meridian Excursion Train, photographed in 1868 after the completion of 247 miles of track west of Omaha, Nebraska.

Not until July 10, 1865, was the first rail laid along the bottoms between Cutoff Lake and the grade leading through the hills out of Omaha. By September 22nd, 10 miles were completed and in use, with material on hand for a hundred miles more. The equipment on that date consisted of four locomotives, thirty flat cars and five box cars.

On January 26, 1866, the first government inspection was made by Chairman Colonel J. H. Simpson, Major General Samuel R. Curtis and Major William White when about forty miles had been railed. During the same year, General Dodge resigned his army commission and joined the Union Pacific as chief engineer of construction. He contracted with two experienced tracklayers, Jack and Daniel Casement, and soon 1,000 men were on the work force. Many former Civil War veterans were hired. Good workers and accustomed to discipline, these former soldiers were also invaluable when Indians attacked and attempted to destroy the railway because of the invasion on their hunting grounds. Rifles were within easy reach of every work crew, and each construction train carried an armory car. Military companies and Pawnee Indian scouts offered protection for the equipment and work gangs, especially the surveying crews which

were often far ahead of the graders. In addition, the government maintained several forts, among them Bridger, Fetterman, D. A. Russell, Laramie and Sanders, — most of them established during the '60's. During 1866 two hundred sixty miles were completed. We are indebted to Crofutt for this note regarding the progress of the line:

"North Platte City . . . Distance from Omaha, 291 miles. The road was finished to this place November 1866 . . ."

Bad weather almost shut down work on the Union Pacific during the winter of 1866-67. The small camp of North Platte became a town of nearly 5,000 as businessmen and promoters came from the east to "provide the needs" of railroad workers who had money and nothing to do until spring. Saloons, gambling houses and houses of prostitution, (some to be called "Hell on Wheels") were soon plentiful, and as the railroaders moved on in the spring the buildings were easily disassembled and moved to the next camp.

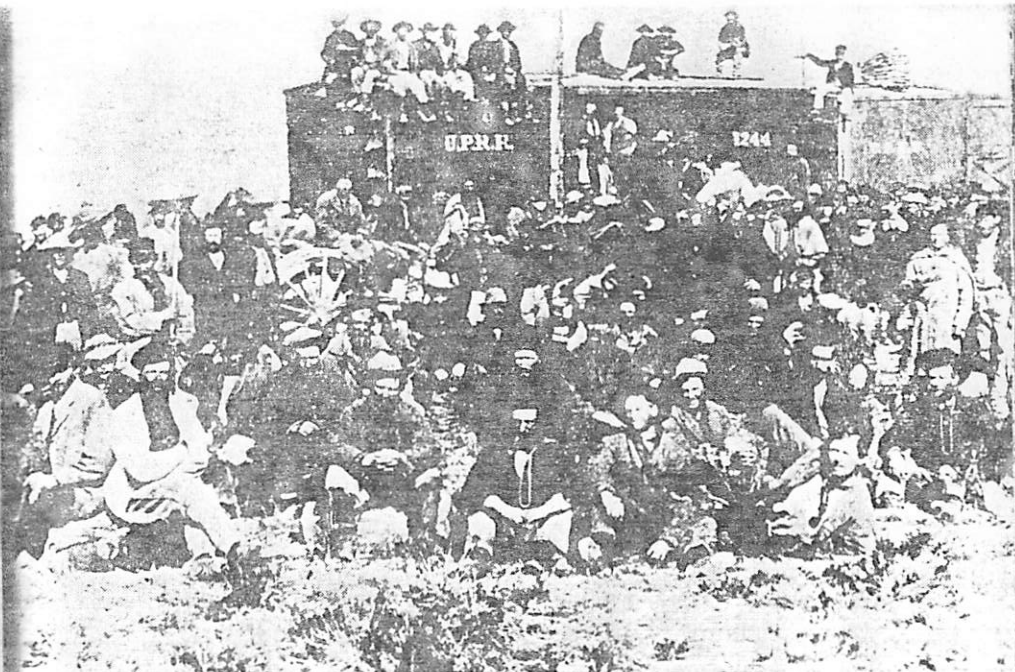
As soon as spring arrived, construction again commenced. In 1867 a two hundred forty-mile advance brought the line to the summit of the Rocky Mountains, and by June 18th, 1868, the road was completed to Laramie. Crofutt notes that ". . . for some months Laramie was known as the 'end of the track,' which at that time meant it was not only the place for which all freight and supplies for the West were hauled on wagons — but it was the center for all the gamblers, roughs and abominations which followed the building of the road."

In November the rails were laid down the divide from Piedmont. General Dodge stated in his report that the ties and rails were laid on snow on top of the grade through Evanston during Christmas week of 1868. Crofutt noted that "a large amount of freight was delivered here for Salt Lake Valley and Montana. Saw-mills supply lumber from the almost inexhaustible pine forests on Bear River to the southward." The rails reached Wahsatch on New Year's Day, 1869, and caught up to the graders. Rather than delay, a switchback was constructed about two miles west of Wahsatch and the railroad built on what is now the highway down to Castle Rock. In 1868, four hundred twenty-one miles were added to the road, and during the first four months of 1869, one hundred twenty-five miles of new construction took the line to Promontory, making in all about 1,086 miles from Omaha.

GRADING AND LAYING THE TRACK

The *Deseret News* of July 24, 1867, supplies information as to how the grading was accomplished:

General J. S. and D. C. Casement, of Ohio, grade the road, lay the track and put up the telegraph. The graders go first.



Paymaster's car used by the Union Pacific to distribute payrolls to employees during the construction of the railroad in the 1860's.

There are 2,000 of them. Their advance is near the Black Hills. They protect themselves and are digging the great fortification which makes the future sure for us, on through Indian battlefields, while the daily fight is going on. Their work is done to Julesburg. Of tie-getters and wood-choppers there are 1,500. Their axes are resounding in the Black Hills, over Laramie Plains, and in the passes of the Rocky Mountains. They have 100,000 ties in these hills awaiting safeguards for trains to haul them. A mile in advance of the tracklayers are the squads which place the ties. There are three of these. First, however, the engineers set their leveling stakes at distances of 100 feet on the straight lines and 50 feet on the curves. At each of these points sawed ties are placed and leveled by them. Then come two men with a measuring rod, marking off spaces equal to the length of a rail and also the half of this space. These sawed ties are laid by the second squad, to give firm support to the ends and middle of each rail. These are placed by sighting along the guide-ties already laid. The third squad then place the intermediate ties, and the bed is then ready for the iron. (End of quote.)

Again the *Deseret News* reported: The Casements are probably the oldest and most successful tracklayers in this or any

other country. Mr. Guilford, a "Buckeye" son of Old Erin, their manager of track-laying, has been with them for seventeen years. They laid the tracks of the Cleveland, and Erie, or Lake Shore; the Philadelphia and Erie; besides those of one or more western roads; and now have crowned their career on the track of the great Union Pacific. . . .

The paraphernalia of their immense and complicated establishment, as the pioneers of final construction, has justly been the subject of comment and encomium from the eastern press. The symmetrical proportions and effective precision they attained today, upon the verge of forming a juncture with their admirable rival, the Central, forms truly an interesting episode in Utah History.

Far in front of the "Boarding Train" may be described the advance of the track-laying forces, a group of some twenty men, armed with picks, shovels, road-gauges, pounders, spike-mauls, etc. They work in sets of two, a man on each side of the track; who scientifically bed a tie every fourteen feet. These are called the "joint-tie-men." Next come the "fillers," who bed the intervening ties. The "iron-men" follow, ten in number, five stalwart fellows to each rail. With a loud "away she goes" from the foreman, the two rails, each weighing some 700 pounds, are drawn forward from the truck and at the word "down" dropped with a precision only acquired by long practice, one at each side, in their places on the ties.

Seventeenth and Eighteenth, Captain Clayton's car — the former his kitchen, the latter his parlor, — where Mrs. C. presides with the dignity of a true lady. Nineteenth, sleeping car. Twentieth, supper car. Twenty-first, and twenty-second, water cars.

This immense train is attended by two engines, Nos. 117 and 119; Wm. Cain, a railroad expert, from Cleveland, Ohio, conductor of the former, George McCamish, engineer; the redoubtable Wm. H. Milles, conductor of the latter, with Samuel Bradford, engineer.

Jack Casement organized his track-layers into teams and offered them a pound of Tobacco per man if they could lay a mile of track in one day. This was soon speeded up to three or four miles per day. Finally, to settle a bet of \$1,000, seven and three-eighths miles were laid in one day between Bryan and Granger, Wyoming Territory. Cash bonuses also added impetus to the laying of the track.

Following the "iron-men" come the "head-spikers," who gauge the width ("the broad-gauge," five feet between rails) and drive six spikes into each rail. The "back-spikers" and "screwdrivers" come next, who finish spiking the rails and screw up the



Samuel B. Reed, General Superintendent and Engineer of Construction for the Union Pacific Railroad, surveys grading before the tracks are laid for the first transcontinental railroad completed May 10, 1869.

"fish-plates," heavy iron clamps, one on each side of the rail, thoroughly bolting the joints, a recent excellent invention, much superior to the old "chair" splice. The "spikers" are preceded by a set of "spike-peddlers," one on each side of the track. It will be observed that Casement's entire force is working in sets, two men composing a "set." The "chain gang," or "back-fillers," immediately succeed the "back-spikers." These fill in the earth, tamping it under the ties, doing a preliminary "ballasting" business.

Next follow the "track-liners," who, with crow-bars, put the track in perfect line. In rear and directly in front of the outfit termed "the boarding cars," are the "back-iron men," who load the rails upon trucks from the side of the grade, where they are thrown from the flat-cars upon which they are shipped from the East. But "the end is not yet." Water carriers, polished young gents with pail and cup in hand, stand ever near to "cool the parched tongue" of the feverish track-layer. The "tail-piece" of all is a quaint little fellow with a limber back and

india rubber joints, who, automation-like picks up the loose bolts, spikes, tools, etc., and distributes them where they belong.

It would be an ungrateful omission not to mention "Champion Tom," the noble, venerable, full-blooded American equine (horse) who pulls the front truck, in co-operation with the iron-men. He has been the motive power of the Iron-men from Omaha; and very truly, practice has made him perfect in his role

The front of Casement's Train is a truck laden with such sundries as switch stands, targets, chains, bolts, screws, timbers for truck repairs, iron rods, steel bars, barrels, boxes, coal, shovels, picks, crowbars, straight edged wrenches, chairs, levers, hammers, felloes, spokes, old harness, sledges, spike-mauls, cable, rope, cotton-waste, spare coats, mattresses, an indefinable lot of dunnage, wagon-wheels, rockers, sandboards, reaches, etc., with a blacksmith shop in full blast in the rear, in charge of Messrs. Chas. Burgess and P. H. McGrew.

In the Second car is the feed store and saddle shop. The third is the carpenter shop and wash house, with Frank Weidenboerner, a male descendant of Wm. Penn as "Washer-Woman." The Fourth is a sleeper apartment for "Mule-Whackers." Fifth, a general sleeping car with bunks for 144 men. Sixth, sitting and dining room for employees. Seventh, long dining-room, at the table of which 200 men can be comfortably seated. Eighth, kitchen in front and counting room and telegraph office in the rear. Ninth, store-car. Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth, Fifteenth and Sixteenth, all sleeping cars. —Anon.

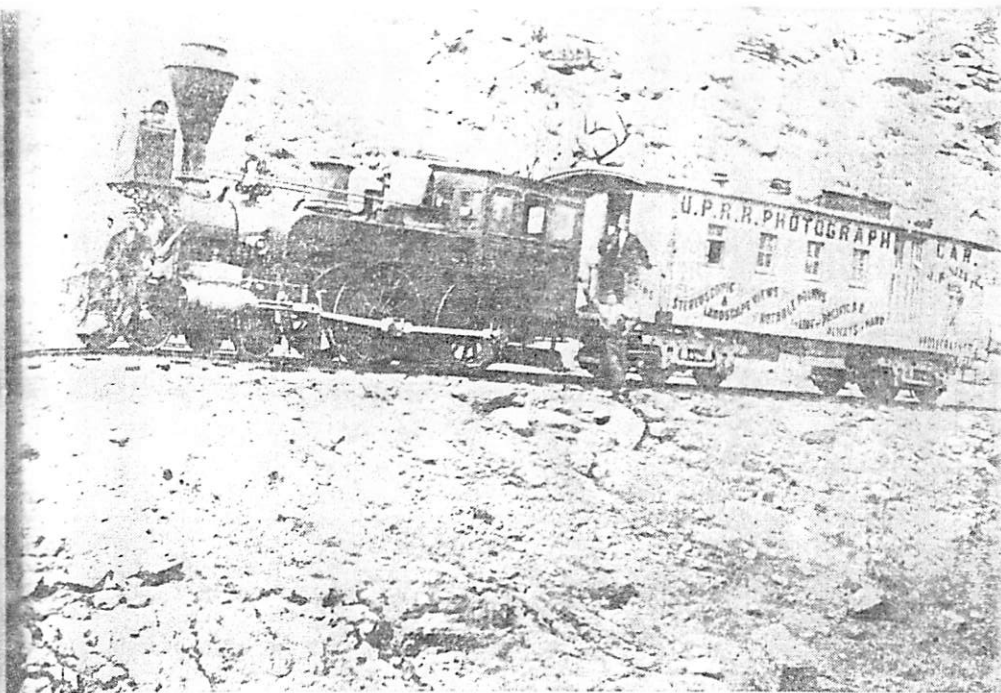
BRIGHAM YOUNG'S CONTRACT

In 1864 General Samuel B. Reed and several men had traveled to Salt Lake City by stagecoach to make a preliminary survey for the route of the Union Pacific in western Wyoming and Utah. They received help from Brigham Young, who had volunteered to furnish the surveyors' transportation. Evidently General Reed was greatly impressed with Salt Lake City, for he wrote:

I have never been in a town of this size in the United States where everything is kept in such perfect order as in this city of the Saints. No hogs or cattle are allowed to run at large in the streets, and every available nook of ground is made to bring forth fruit, vegetables, or flowers for man's use.

In a letter to Daniel H. Wells dated July 16, 1864, Brigham Young wrote:

"Mr. Reed, the Division Engineer of the Union Pacific Railroad, called on the 13th inst., and showed me the map of



Engine No. 5 and photograph car taken near Point of Rocks, Wyoming in 1868 or 1869.

the survey from the mouth of Weber Canyon to a little east of the summit of Bear River Mountain, the point he had reached when he left the party to continue the line, while he made a flying visit to the city. He said that he found the route much more feasible than he had anticipated, and that nearly all that distance the cost of construction per mile would be less than that of the railroad crossing Iowa" General Reed returned to Salt Lake City in May 1868 to transact business with the leader of the Church. During this visit General Reed signed a contract with Brigham Young for construction work. The Church leader was to do the grading, tunneling and bridge masonry on the section of line from the head of Echo Canyon to the mouth of Weber Canyon. The prices asked by Brigham Young under this agreement were in many cases much lower than those demanded by other contractors. Brigham Young's contract was later extended to cover grading and bridging from the mouth of Weber Canyon to Promontory. Said the *Deseret News* of the transaction:

"We alluded yesterday to the making of the contract for the grading of the railroad. We are pleased to have it in our power to state today that a contract for the grading of the

road from the head of Echo Canyon to this city has been closed between S. B. Reed, Esq., Superintendent of Construction and Engineer of the U.P.R.R. line, acting in behalf of that company, and President Young. Should it be decided to run the line through Salt Lake City the grading will be done to this point, but if the route north of the Lake should be selected, then the grading will be done to the Lake. The distance to be graded will be between fifty and ninety miles. From the mouth of Echo the line will run down the Weber, through which canyon it will enter this valley.

"In Weber Canyon there is considerable tunneling, blasting and mason work to be done. Men familiar with these branches can obtain work by moving early in the matter, as it will be let to those who are on hand to take it. Picks, shovels, plows, scrapers, wheelbarrows, and carts will all be needed to carry on the work, and those who wish to take jobs should prepare themselves with these tools, etc., and be prepared to commence as soon as the route is located, which will probably be within a few days"

About this time the following announcement was made: "Messrs. Joseph A. Young, Brigham Young, Jr., and John W. Young, agents for President Brigham Young, left this city on the 8th inst., for the head of Echo Canyon, to let contracts for grading on the Union Pacific Railroad, and will begin the lettings on Thursday, the 11th inst. Parties wishing contracts on that road can now start their men, provisions, tools, etc., as fast as they can get ready. As soon as the line is all located, about 10,000 men will be wanted."

The promptness with which the Latter-day Saint men answered their leader's call, however, seems not to have been matched by the railroad company, for in September the following letter, the original of which is in the D.U.P. files, was sent to Supt. Reed by President Young:

Salt Lake City
7 Sept. 1868

S. B. Reed Esq.
Mouth of Echo.
Dear Sir:

I am anxious to have the road to the west of Weber cañon laid out as soon as possible, so that I can go to work there; which I expect to be able to do in a very short time, as also to put on all the men that are necessary to very quickly finish the contract I am at present at work upon.

As soon as I can get my own road well stocked with hands I will do my best to raise the 600 hands, regarding

R. Raymond Green, M.D.
375 East 2nd North
Heber, Utah 84032



END OF UNION PACIFIC TRACK-1867
NEAR ARCHER, WYOMING

whom you this morning telegraphed me; and to which I replied as follows: "When I feel I have sufficient hands on my own contract to secure its completion, I will do what I can for him." The delay in setting the men to work on the road has caused many of the hands to scatter for a time out of my reach, but there is no question but that the teams you require can be obtained, if some men were employed to hire the teams and take charge of them until they could be set to work.

I will endeavor to see that there are no tools taken by my hands, except to be used on my job. A number of the men who have finished their jobs are anxious to get pay for their day's work. I should be pleased if in your next assessment you could include these items in your payment.

Yours &c Brigham Young

The principal sub-contractors under President Young — whose contract amounted to about two and a quarter millions of dollars — were Bishop John Sharp and Hon. Joseph A. Young,

the president's eldest son. They employed between five and six hundred men, and the amount of their contract was approximately a million dollars. To them fell the heavy stone work of the bridge abutments and cutting of the tunnels in Echo and Weber canyons. Afterwards, in the "race" between the Union Pacific and Central Pacific constructing companies, Sharp and Young took another contract amounting to a hundred thousand dollars, upon which they employed from four to five hundred men.

East of Echo Canyon, another contract was taken by Joseph F. Nounnan and Company. Mr. Nounnan was of the firm of Nounnan, Orr and Co., bankers of Salt Lake City. From them David P. and Heber P. Kimball, W. R. Judd and others took sub-contracts. Their camps were on Sulphur Creek, Yellow Creek and Bear River.

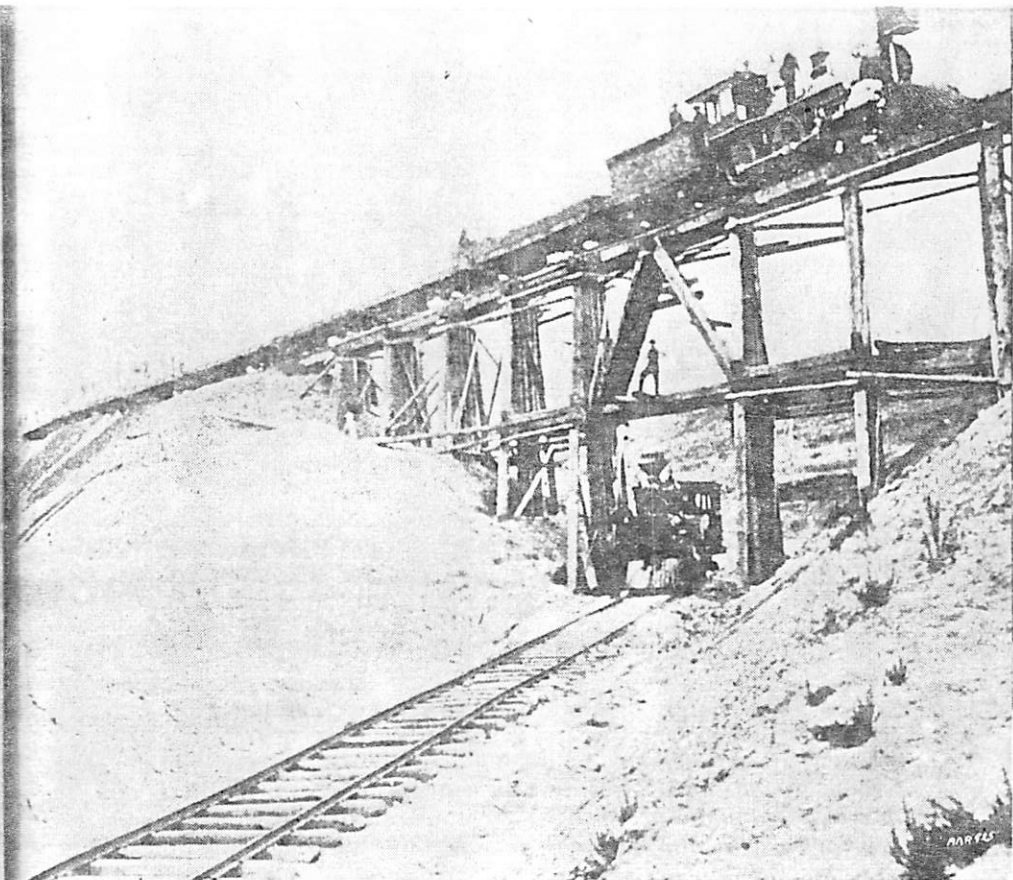
THE MASS MEETING

On Monday, June 8, 1868, a meeting was held with J. M. Carter, chairman, and A. W. White, secretary, at which time resolutions were adopted to call a mass meeting of the citizens, that expression might be given to the popular feeling relative to the railroad coming through Salt Lake City. On Wednesday the 10th the mass meeting convened in the Tabernacle and about three thousand were present, representing all classes of the community. President Young said:

... I know what my wishes are, and I understand what would be for our benefit in building this railroad . . . I would like to hear that whistle, and the puffing of the "iron horse" every evening and through the night, in the morning and through the day. If the company which first arrived should deem it to their advantage to leave us out in the cold, we will not be so far off but we can have a branch line for the advantage of this city . . . I am certain of one thing and that is that the Eastern Company is determined to meet the Western Company as far west as possible, and that the Western Company is determined to meet the Eastern Company as far east as possible, but whether the junction will be in our city or in the vicinity adjacent I do not know . . .

The committee, through the chairman, Hon. D. H. Wells, reported the following resolutions, which were carried unanimously:

RESOLVED: — That Utah welcomes to her borders the coming railroad, and hails, with pleasure, closer contact and more intimate relations with her friends east and west.



The Great "Z", head of Echo Canyon. Photo taken during completion of Union Pacific Railroad in 1869.

RESOLVED: — That every advancement in civilization and enterprise will always and at all times receive a helping and friendly hand from the people of Utah.

RESOLVED: — That it is the wish of this meeting that the railroad shall come to this city and pass by the south side of the lake, and for that purpose proper and suitable grounds for depot, machine shops and improvements can be obtained within this city.

RESOLVED: — That one hundred thousand citizens of this nation demand that this great national work shall be performed for national good and for the people's benefit and not for private profit or personal speculation.

Colonel T. H. Head presented the non-Mormon point of view:

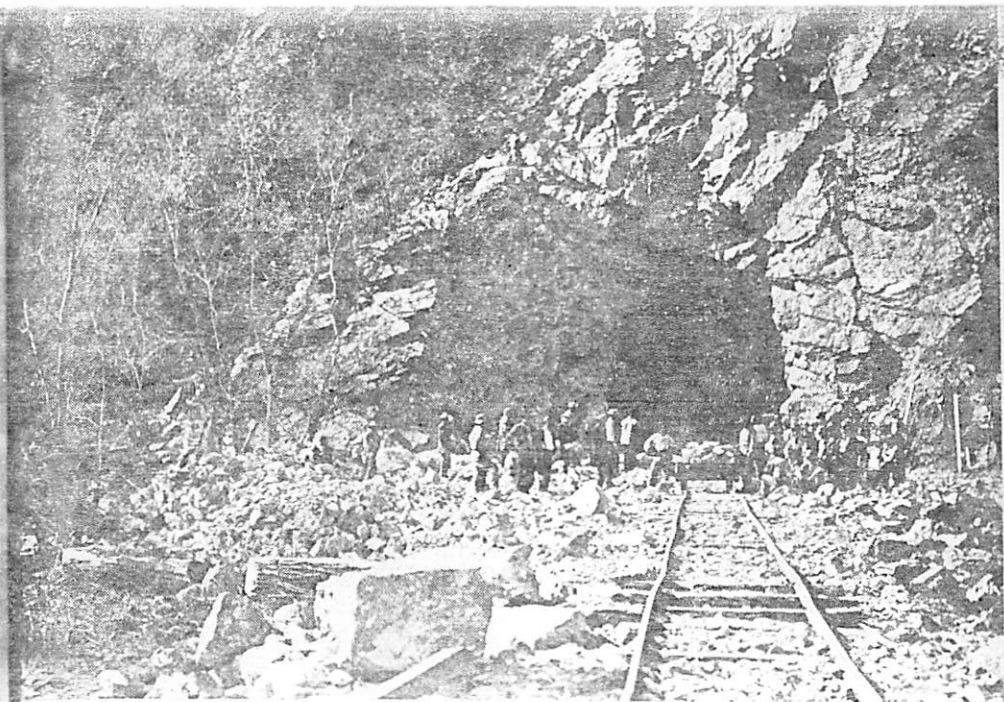
The interest of the Pacific Railroad and the interest of the people of Utah are identical. They will get their titling on all our dollars, and they want us to have just as many dollars as possible . . . Here is a commercial center already made. If this country were a desert as when you came here . . . it would then be about an even question whether the road should go north or south of the lake . . . The northern route, it is claimed, is a trifle shorter . . . On the south route of the lake there is a desert to contend with; and the advantages and disadvantages of the two routes are substantially equal . . .

The devotees of the southern route were doomed to disappointment. Careful surveys led the chief engineers of both companies to a decision in favor of the northern line, by way of Ogden, Corinne, Promontory and the northern end of the Great Salt Lake. The report of Chief Engineer Dodge clarifies the reasons for this decision:

The Pacific Division from Salt Lake to the California State line, is divided by the formation of the country, into two subdivisions, the first reaching from Salt Lake to Reed's Pass, in the Humboldt Mountains. This division was examined on the line to the south of Salt Lake by Mr. Reed in 1865. Its great objection is the desert 42 miles long. The surveys indicated a practicable route, with easy grades and light work, but a great scarcity of water and timber. Examinations during the latter part of 1866 and the beginning of 1867, indicated a better route to the north of Salt Lake, crossing one arm of the lake, turning Promontory Point on the south, turning strongly north of Spring Valley, thence west, skirting the northern rim of Great Desert or Mud Flats, passing through North Passes of Taone and Pequot Mountain ranges, and thence to Reed's Pass, in Humboldt Mountains. This route is shorter from the point where Weber River, Ogden River, or Bear River debouches from the Wasatch range, than the route through Salt Lake City and south of the lake, avoids the desert, and places us in a country, a large portion of which is said to be fine grazing land, and a portion susceptible of cultivation, with a fair supply of water and timber, and, in grades, alignments and cost, will compare favorably with the line south of the lake.

REPORTS OF PROGRESS

From Evanston, the location crews entered Echo Canyon, where surveyors found that a long tunnel would have to be driven through one of the ridges. The tremendous job could not be accomplished at the time, if the Union Pacific was to win the race against the Central Pacific, so the crews staked a harrowing temporary bypass around the imposing mountain



East end of Union Pacific Railroad tunnel, Weber Canyon. This was part of the "100 Mile Job" contracted by Brigham Young. (Photo by A. J. Russell, Original in Daughters of Utah Pioneers Museum.)

ridge. Meanwhile, Mormon men had responded so quickly to the call for laborers that some of them were forced to wait four to five weeks for the surveyors to drive location stakes and show the foremen where and how to grade their sections.

Edward L. Sloan, young Latter-day Saint newsman, was sent by the Church to the head of Echo Canyon to report the progress of the rails through Mormon country. His informative accounts appeared in the *Deseret News* under the name of Anon:

June 11. The line runs along the mountain on the east of the little canyon and the side rolls with dips and spurs which make a succession of heavy fills and cuts. Bishop Sheets has about three quarters of a mile which commences with a high embankment where it joins Bishop Young's fill . . . There is a cut and fill along the side of the mountain in this contract, 350 feet long, where the ground is so precipitous that it has to be terraced to hold the earth thrown down, or there would be danger of the whole sliding away when melting snows and Spring loosen the earth. Then follows a cut 300 feet long, which is thirty-seven feet deep on the upper side and 13.5 on the lower

Some temporary interruption of travel might reasonably have been expected from the building of a railroad through our mountain passes, and especially down the Weber. Such, however, has been the promptness of the engineers and the care of the sub-contractors and workmen under them that, so far, I am not aware that the slightest interruption has occurred, and the toll has been as uniformly collected by the gentlemanly gate-keepers of the Weber Canyon Road Company, Messrs. John Lamb, near the mouth of Echo and Alvin West at the mouth of Weber, as though nothing so stupendous as railroad building was in progress.

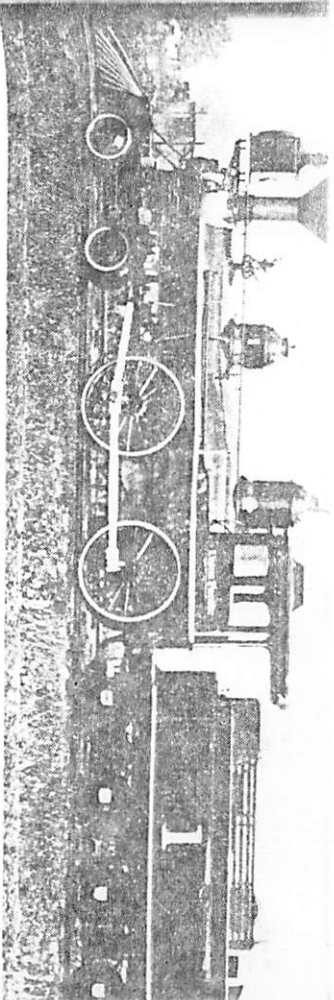
Sept. 16 — Construction Trains. — From last Monday the U.P.R.R. was to run three construction trains daily from Benton to Bitter Creek, 88½ miles west of Benton, making the running distance of regular trains 780 miles from Omaha. Casement's trains carry the materials from that point to the end of the track.

Sept. 30 — L. J. Nuttall, Esq., is in from Mountain Green, where he has been for a short time assisting on the Hon. John Taylor's contract, and says that the grading on that contract is nearly done and it is all sub-let to men who will put it through. Mr. Taylor has a steam-mill busy at work, and various gangs of men logging, to turn out a million feet of lumber, which he has contracted to furnish to the Union Pacific Railroad.

Dec. 30 — From Bishop A. K. Thurber, who left Echo on Saturday, we learn that the locomotive was in the Canyon. The tracklayers were three or four miles this side the summit when he left, and the prospect was that they would come right down. The bishop thinks that by this time the ties are laid to the mouth of Echo, and that after making allowance for storms, they will be at Echo City by the 10th of January. Dr. Durant was expected at the Summit on Friday night. The snow is lighter at the head of Echo than at any point this side of it.

Jan. 18, 1869 — The cold is not especially detrimental to the furtherance of the work since our men are armed with invincible wills to push on the completion of the road. It is reported that the cars will be here very soon; if so, we have confidence in saying that we shall be prepared for their arrival. We assure you that we shall hail their approach with no small degree of pleasure.

May 2. The bridges in Weber Canyon are on the rampage. The past few days, sun has sent the liquidizing snows in torrents through their rugged course. First went under the wagon crossings... next... the... railroad crossings. The bridge at Devil's Gate commenced giving way last night. The 300 feet



Union Pacific No. 1.

of trestle work at Strawberry Ford next evinced signs of "caving." The first bridge below the Narrows, or Slate Point, next succumbed.

In consequence of these disasters, no train passed through the canyon yesterday and today. "All hands and the cook" have been summoned to the rescue. Car loads of lumber have rolled from the construction yard as on wings of lightning to the point of fracture, and every requisition has been made that could in any degree facilitate the work of reparation. Vice Presidents Durant and Dillon and the commissioners were also at the front to observe the situation and direct the repairs. — *Deseret News*.

THE RAILS REACH OGDEN

On March 18, 1869, the Union Pacific tracklayers came within sight of the excited and anxious citizens of Ogden. The high levels of earth, water-cut by the Weber River, were crowded with people of all ages, dressed as for a holiday. As the men changed their heavy sledge hammers and sank the spikes on ties with rhythmic might, the sparks of fire were more than matched with the people's glee. As fast as the track was laid, the great fiery steed steamed, wheezed and whistled as only a happy engineer could talk to an eager audience. The venturesome horsemen were thrown in panic as runaway animals snorted, whinnied and raced off to safer land. A band played near the place appointed for the workmen to stop; the railway from the east was in town! What a day! What a crowd! At 4 p.m. the procession of all Weber County and hundreds from Salt Lake, Utah, and Cache counties were present. And what a parade! On the stand in Sunday black, Mayor Lorin Farr called the assemblage to order. He welcomed the workers and the railway men, assured them of Utah's joy at their coming and urged that all keep diligently working until the continent is spanned in one great nation of peace and prosperity.

—Whitney

CENTRAL PACIFIC - FIRST IN THE WEST



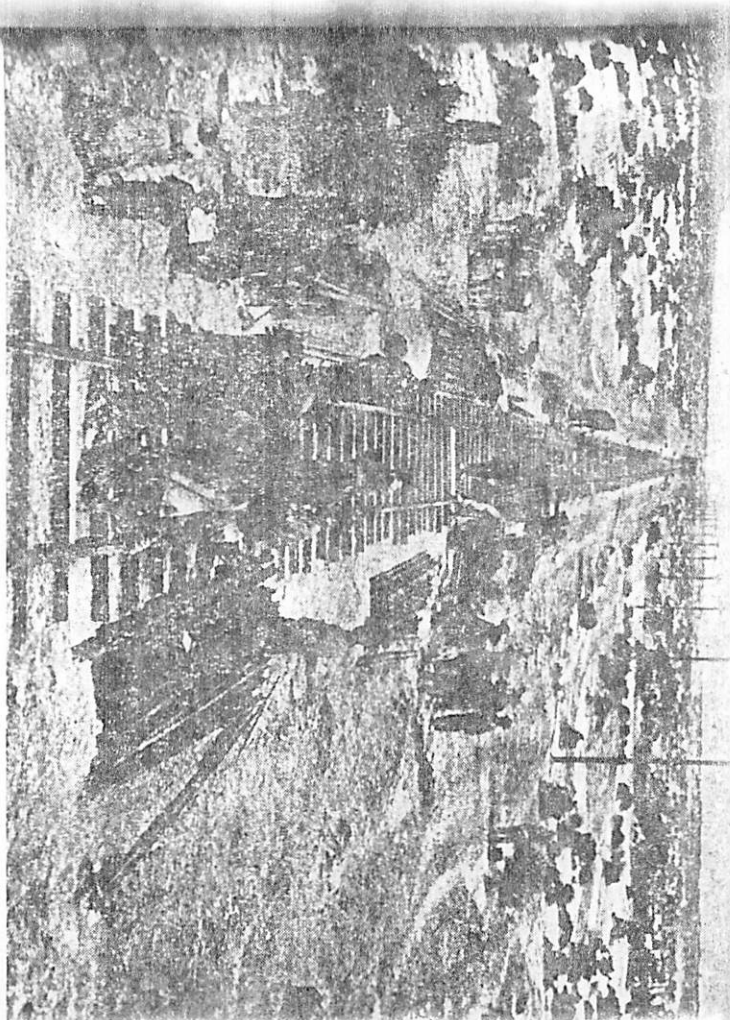
Theodore D. Judah

In Sacramento on August 9, 1855, with a mere nod from Theodore Dehone Judah, a small group of workmen lifted a length of rail and spiked it down on a stretch of wood ties. Thus the first rail for the first steam railroad west of the great Rockies was laid and it was only a matter of time before construction of the pioneer Sacramento Valley Railroad would be completed, marking the real beginning of railroading in the Far West.

Although during the years of 1835-55, various parties of army engineers were sent into the West to make surveys for railroad routes, it was Theodore D. Judah, who built

the 23-mile line between Sacramento and Folsom and began the survey for the beginning of a railroad east over the Sierra. Judah started to seek help to build the line. He had been promised aid in San Francisco but at a meeting arranged with the moneyed men of the west coast, not a cent was pledged. Disappointed, he went to Washington D.C., opened a room in the Capital, and talked "railroad" to everyone who would listen, until he became known as "Crazy Judah." For nearly two years he remained in the East, spending his own money, and it is said the only bill he ever submitted was one of \$40.

Returning west about 1860, he interested the "Big Four" — Huntington, Stanford, Crocker and Hopkins — in the project, following a historic meeting in Sacramento. Against the advice of their friends and in the face of strong opposition, these four men threw their entire resources and personal credit into the project of building the Central Pacific Railroad. Leland Stanford, with a law degree and a new bride, had followed his adventurous inclinations to the West and settled in California in 1852, where he became a dealer in groceries and provisions. In 1861 he was elected governor of the State of California. Collis P. Huntington and his partner Mark Hopkins, were owners of a large and thriving hardware business in Sacramento, California. They invested large sums of money, and with the pledge of the government to aid with subsidies and land grants, made

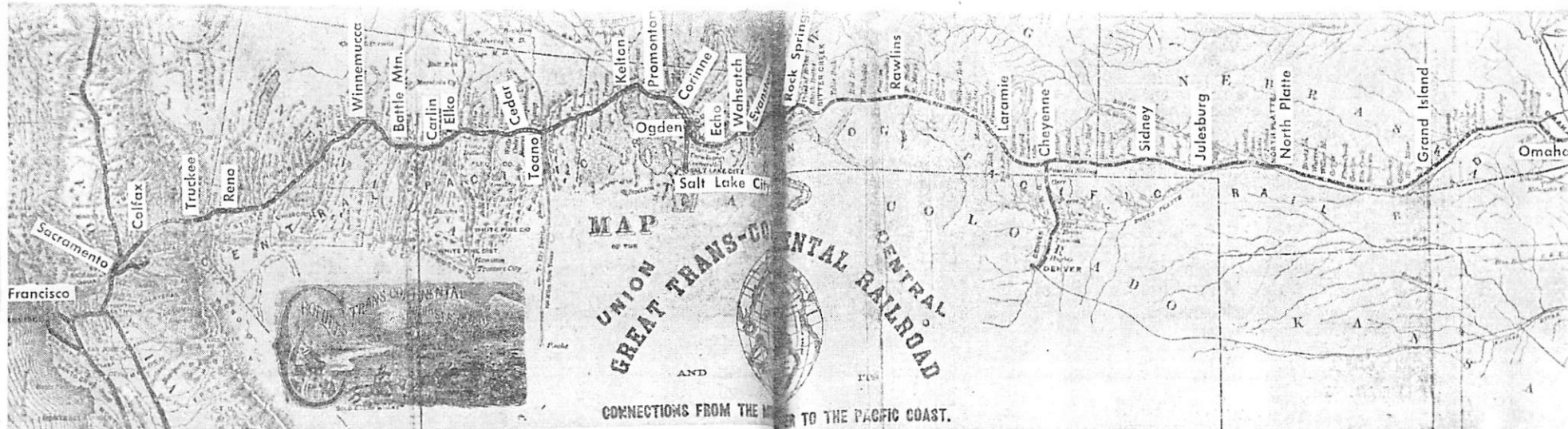


Construction of Track and a Telegraph Line in 1868 as Central Pacific forces were building the western link.

it possible for the railroad to be built. The Crocker brothers, Charles and Edward, were two other prosperous dry goods merchants in Sacramento. Charles gave his wealth and prestige in furthering the prospects of the building of the Central Pacific Railroad.

Following the signing of the Enabling Act, the first shovel full of earth was turned by the Central Pacific January 8, 1863. Stanford was chosen president; Huntington, vice-president; Hopkins, treasurer; Judah, chief engineer; Charles Crocker became one of the directors and general superintendent of construction. Huntington went to New York to raise money but met with little encouragement, for most men of the east felt the enterprise was too risky.

The country to be opened by the railroad was then almost entirely a wilderness and reports of the region at that time were dissuasive toward such a venture. Still fresh in the minds of emigrants who crossed the plains to settle the west were mountain roads so steep that covered wagons had to be lowered down them by ropes. Picks and shovels, black powder, wheel-



barrows, one-horse dump carts, were the only aids to grading at the time. Cutting a roadway through the rock walls of the Sierra would be literally hand carving.

Although each of the four associates was a wealthy man, as wealth was counted in those days, their combined resources were totally inadequate to finance more than a start in building and equipping the first forty miles which was necessary under terms of the federal bill before one dollar was available in government bonds. New York capitalists were not interested in the railroad as an investment, but they were impressed with the high credit rating the Sacramento businessmen held in the commercial world. Thus, by personally guaranteeing the interest on a limited number of Central Pacific bonds for ten years, the four associates raised enough money to start construction on a big scale.

The first rail was laid in Sacramento on October 26, 1863, the first locomotive, *Governor Stanford*, went into service November 10, 1863; and the first 31 miles of railroad were in operation to Newcastle on June 10, 1864, when the first timetable was published (four days premature) announcing regular passenger and freight service.

The *Sacramento Union* of Dec. 5, 1863, offered the following:

The company which has just begun work at Omaha is the Union Pacific Railroad Company, which was chartered by Congress and which is to build the Nebraska branch from the Missouri River to the junction with the Kansas branch west of Fort Kearney and the main track from that point to the west line of Nevada Territory. It is not required to complete

any given number of miles in any one year, but must have the whole line finished by 1874. As the distance from Council Bluffs, as estimated by the survey of Lieutenant Beckworth, to the California state line is 1,758 miles, the Union Pacific Railroad Company will be compelled to build 175 miles a year if it completes the work by 1874. The labor, though, of building a railroad up the valley of the Platte, is very light when compared with that required to construct one over the Sierra Nevada Mountains.

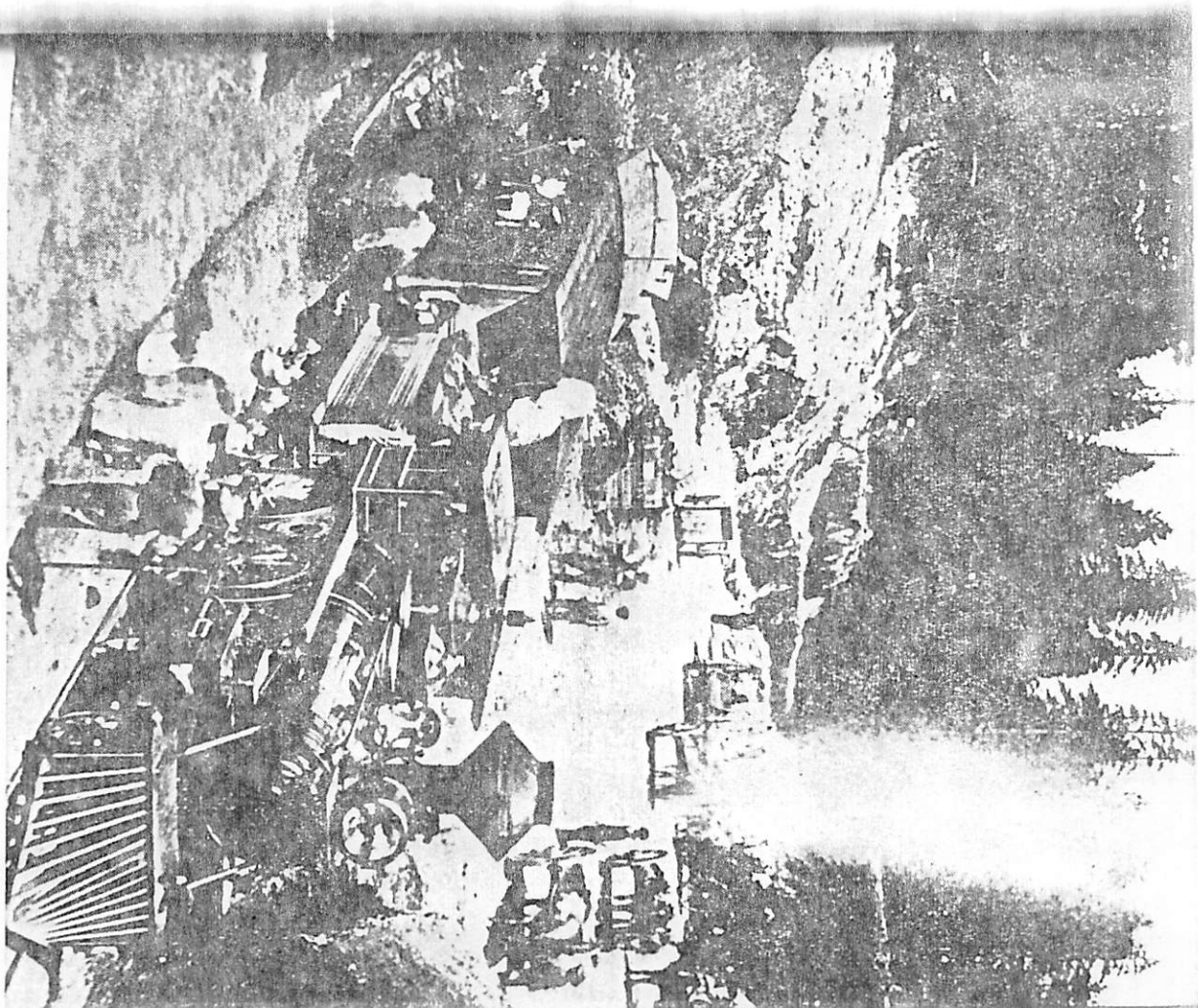
In California something handsome has been done in getting the Pacific Railroad under way, but we do not pretend to push ahead as they profess to be doing in Kansas. The work on this side is vastly heavier than in that state and Nebraska. Within a dozen miles or so the Railroad Company here is compelled to begin the ascent of the dreaded Sierra Nevada. The heavy and costly work here is encountered at the very start; whereas, on the Atlantic side, hundreds of miles can be built over a level plain — where the grading will cost only a few dollars a mile. Here, too, we have to transport iron and rolling stock some twenty thousand miles. But in the face of these difficulties the Central Pacific Company has, within eleven months, purchased the iron and rolling stock for seventy miles — a portion of which has arrived and the rest is on the way. The grade is finished for eighteen miles; a splendid bridge built over the American River; the iron is laid for a mile beyond the bridge; and by the first of January 1864, unless the iron on ship board is detained beyond all calculations, the road will be in running condition eighteen miles. At that point it strikes and crosses the California Central Railroad. Contracts are let for thirteen

miles more, which make thirty-one miles to be completed in February. And so far up the mountain do those thirty-one miles carry the road, that on the last division of seven miles the grade is one hundred and five feet to the mile, which is the maximum grade in crossing the mountain. The work, too, is heavy and costly. Compared with the Eastern line, it is gigantic. But it is steadily advancing; and if the new State of Nevada will extend a helping hand to the extent of the amount proposed in Convention to aid in building the second fifty miles, the road may reach the valley of the Truckee in two years from this month. When once over the mountains, it will travel east, toward Humboldt, Reese River, Ruby Valley and Salt Lake as fast as the Kansas Company professes to be building theirs — at the rate of a mile a day. After the Pacific Railroad is completed over the mountain, it will literally build itself across the Great Basin. It will further be recollected that the Pacific Railroad in California was inaugurated on the 8th of January, 1863, nearly a year before work was begun on the Atlantic side. The Kansas Company commenced work about a month since, and the Union Company on the first day of this month. The work now is fairly begun at the east and west ends of the line, and we trust it will be continued with unflagging energy until the line is stretched across the continent. (End of quote.)

In the forests of the Sierra Nevada many sawmills were built, making a total of 625,000 feet of lumber daily for the Central Pacific. Over a thousand men were employed to keep the sawmills supplied with logs. All of the rolling equipment and most of the building materials had to be shipped 15,000 miles around Cape Horn from the east, a voyage of eight to ten months. At one time the Central Pacific had thirty ships on the high seas loaded with materials. White labor was scarce in California, for men were more interested in digging gold than in working on a railroad.

Judah lived only long enough to see construction actually under way on the railroad to which he had been so devoted. He contracted fever while crossing the Isthmus, and died in New York City on November 2, 1863, a young man on the threshold of a distinguished career. Sam S. Montague succeeded him as chief engineer, with J. H. Strobridge as construction superintendent. A feud had existed between Huntington and Judah, and some historians claim that Judah was paid about \$100,000 for his share of the Central Pacific.

The builders soon faced serious financial difficulties as the money raised in New York had been exhausted, mostly in the purchase of equipment and materials and in greatly increased cost of their transport around the Horn due to wartime conditions. Work never came to a complete stop, but there were days

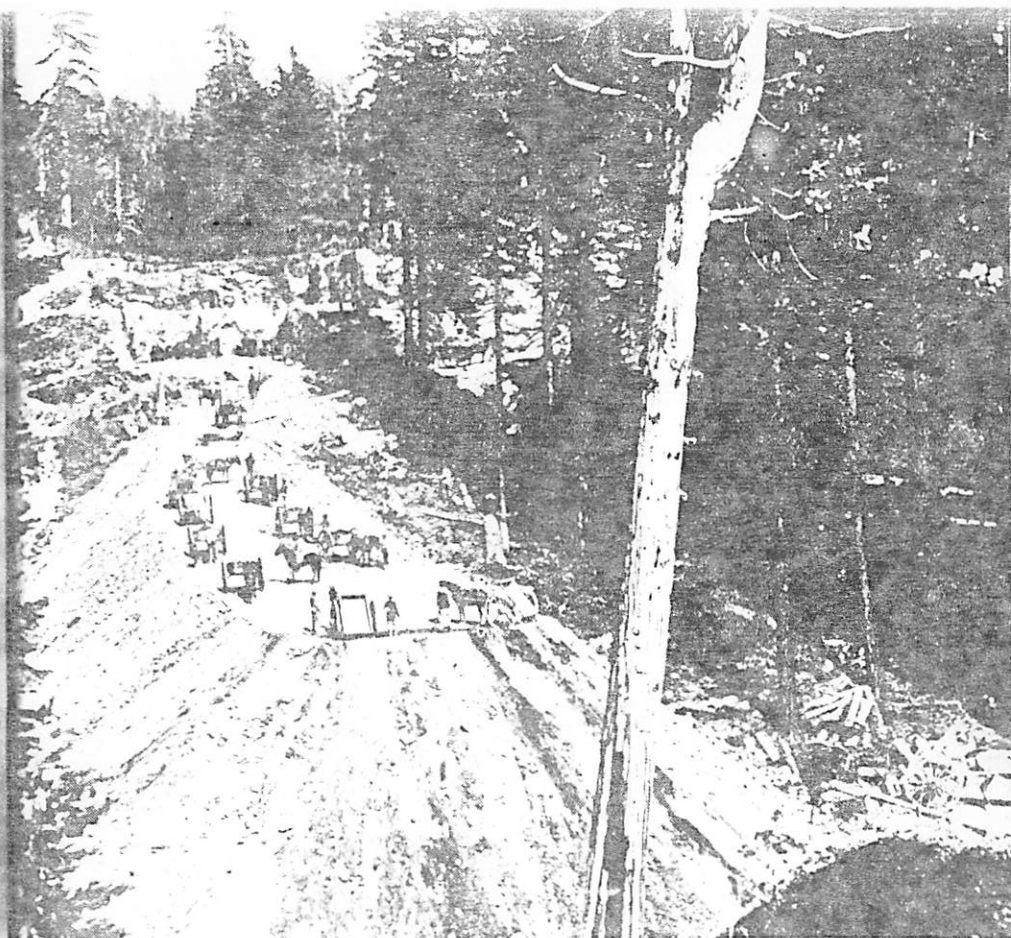


Work Train of the pioneer Central Pacific at rail-head in the Sierra Nevada Mountains of California in 1865. This photograph shows the grade being cut above Auburn.

on end when there was no money in the company's treasury. At this time an appeal was made for public support. The voters of three counties responded favorably, but strong opposing interests threw the bond proposition into court, and it was well into 1865 before the aid was available. Advantage could not be taken of a mild 1864-65 winter in the Sierra; otherwise the Central Pacific might have met the Union Pacific at Cheyenne instead of Promontory. Eleven months passed before the five miles between Newcastle and Auburn were opened to traffic May 13, 1865. Beyond Auburn the forty-mile mark was passed and government bonds loaned the railroad could be turned into cash. At this point Crocker hired the Chinese laborers, and the Orientals proved so successful that hundreds were added to the construction gangs. Too much credit cannot be given to these Chinese workmen, for without their assistance Central Pacific would not have been built beyond the eastern borders of California at the appointed time. Central Pacific did not allow drinking nor gambling among their crews.

The beginning of 1866 saw the fight to overcome the Sierra begin in earnest as Crocker decided to work the 1,659-foot summit tunnel from four faces. A shaft was sunk and crews worked each way from the center while others dug from the entrances. Rock was so hard it took the better part of a year to dig the shaft deep enough to begin the laterals, and it was another year from then before the tunnel was completed. Altogether, 15 tunnels were bored through the Sierra. The severe winters of 1865-66 and 1866-67 called for superhuman courage and initiative to keep things going. Crocker was surprised time and again by his Chinese workmen as they met and solved problems, sometimes reverting to ancient customs of their homeland. To accomplish the blasting in the Sierra ledges, the Orientals wove round, waist-high baskets similar to the ones their forefathers had made and used for high work. Ropes ran from the islets made in the baskets so that the hauling crew could let them down and up.

Soon the Central Pacific faced a shortage of blasting powder. They had been using nearly 200 kegs a day when they were notified of the shortage. Prices rose and finally none could be bought. More than 10,000 Chinamen were now grading and building tunnels through the mountains. It is said that early in the spring of 1867 the first nitroglycerin factory built by the Central Pacific was installed in a building on the west end of Donner Lake. Here, with James Howden of England as chemist and a crew of the Chinese laborers as helpers, the explosives were manufactured. The Chinese were sometimes lowered in their baskets one thousand feet above the American River where they ignited the powder. From this dangerous



Chinese "Coolies" carve way through the Sierras.

operation came the phrase "not a Chinaman's chance," for many of the Orientals lost their lives, or were permanently maimed.

Where there was a group of Chinese, there was a bronze Buddha, for wherever man travels he takes with him something of "home." So it was with the Chinamen who worked on the Central Pacific. Sometimes they also insisted on Joss Houses, and priests to serve them. And while the railroad officials fought the white men for drinking alcoholic beverages, they allowed the Chinese to smoke their opium.

The Chinese companies later accepted an agreement whereby each workman would labor for \$35.00 per month if the Central Pacific supplied the kind of foods they were accustomed to — rice, bamboo shoots, poultry, pork and tea.

On November 24, 1866, the Central Pacific rails had reached Cisco, just 12 miles from the west entrance of what would be the long Donner Summit tunnel. It was from this point that one of the strangest undertakings in the whole Pacific Railroad endeavor took place. In order to keep the pace without the advantage of new labor-saving devices being put into use by the Union Pacific, Crocker, Montague and Strobridge prepared to work both ends of the tunnel at the same time. Although a right of way had been staked from the tunnel's east entrance to the Nevada border, ties, rails, spikes, tools, locomotives and cars would also have to be taken through the heavy snow to the eastern slope. Pausing only long enough to build sleds from huge logs, the needed materials, including three locomotives and forty cars, were slowly dragged over the snow-covered pass by Chinamen and oxen. From the camp then established in Truckee Canyon, the Chinese were able to work on the tunnel as well as to the Nevada border. Thus was a Central Pacific locomotive able to cross the border in 1867, although a seven-mile section of the treacherous tunnel was still incomplete.

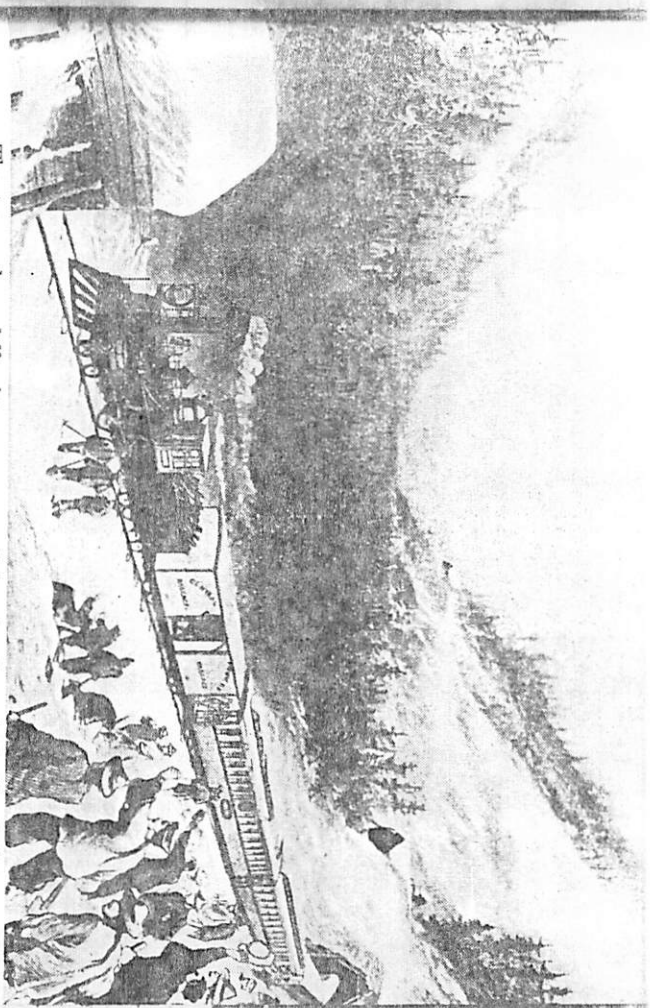
Difficulties in keeping the line cleared of snow in the high Sierra region convinced the builders that the problems must be solved before trains could be operated successfully, so it was proposed that snowsheds be built over the tracks. Experimental sheds were erected in the summer of 1867. Construction that started in the spring of 1868 was completed in the fall of 1869. Forty miles of sheds were eventually erected, the nearly solid covering over the tracks once prompting a boomer brakeman to remark: "I've railroaded all over the world, but this is the first time I've ever railroaded in a barn."

Crocker announced a construction program of a "mile of track every working day," a goal that actually was surpassed. The race with the Union Pacific was on in earnest. Each company was alert to the advantage in future earnings from every additional mile of railroad built. The tough work in solid rock above Donner Lake was completed in the spring of 1868. On June 19th the road was opened to Reno and the railroad engineers staked out the townsite.

The "mile a day" program went into high gear. Crocker's "pets," as the 14,000 Chinese were dubbed, together with some 2,000 whites and about 6,000 horses, responded with superhuman effort. Canvas towns sprang up to live but a few days as rail-head was pushed steadily eastward.

Again the *Deseret News* gives credit for the introduction of nitroglycerine in railroad building:

The Central Pacific Railroad Company is very largely due indeed the successful introduction of this powerful industrial weapon, and that the gratitude of all having the State's pro-



The tremendous difficulties encountered by the Central Pacific Railroad in constructing the western end of a road are shown in this sketch by Joseph Becker.

gress at heart is largely due them no one will deny. About two thousand blasts, in which nitroglycerine was the moving agency, have been made within less than two months in the summit tunnel on the line of the Central Pacific road, and not the slightest accident has occurred. From viewing it with the greatest dread, the white and Chinese employees have come to view the nitroglycerine as a powerful and valuable assistant, which exhibits a strong friendship for human muscle. The secret of its safe use lies in manufacturing it from day to day, just as it is required. If allowed to lie unused for any length of time it has a strong tendency to decompose. In this state, even if uncovered, it is somewhat dangerous; but it is when packed in air tight boxes and exposed to a warm climate or artificial heat that its destructive qualities are most rapidly developed. In every respect this danger was ignorantly courted in the glycerine which was imported to our State. It was packed in air tight boxes and sent upon a long tropical passage; this produced decomposition and the formation of dangerous gases, which had no vent (want of this being the most fatal error) and everything being ripe the last strain was put upon the neck of the camel of destruction by the concussion of even the slightest blow. Make the article on the ground as it is required, and while it is fresh it may

be sealed up in a box and thrown against granite and no explosion will occur; but in its decomposition and confinement from air lies prolific death and destruction.

BENSON, FARR AND WEST

On the Central Pacific, the principal contract taken by Mormons, was given to Benson, Farr and West, who struggled with the great undertaking of building the western road from the vicinity of Humboldt Wells to Ogden, about 200 miles. Originally the contract was held by Farr only, but on the advice of President Young he associated himself with the other two. The fifty-three-mile portion constructed by them from Promontory Summit to Ogden was never used by the company owing to the fact that the Union Pacific main line reached Ogden first and pushed westward to Promontory, paralleling the grade of the Central Pacific between those points. The grade, however, was accepted by the Central Pacific Company for their work, and though some delay ensued, the contractors, — Benson, Farr and West, received their pay. In fact they received more than the contract price, for so anxious had been the company to lengthen its line that President Stanford had agreed with Bishop West, on condition that the work be pushed forward with all possible speed, to pay him whatever it might cost.

The *Deseret News* of March 24, 1870, verifies the fact that President Farr — his associates both being dead — received from the Central Pacific Railroad Company one hundred thousand dollars. The amount, however, went to pay sub-contractors, and President Farr emerged from the undertaking with little or nothing for his labor. As late as November 17, 1868, the *Deseret News* reported:

Work is being prosecuted with activity on the contract of Snow, Nichols and Loveland on the Central Pacific Road. Their contract extends 27 miles from Willard City north-west round the edge of the lake to Promontory Mountain. The line for the distance has been all located and sub-let into smaller contracts. Ground was broken a little below Willard last Thursday by Bishop Nichols. It is expected that work on the line will be commenced in the vicinity of Ogden during the present week. (End of quote.)

On March 25, 1869, a letter was sent to the *Deseret News* by one who signed the name, "Saxey," comparing the progress of the two roads:

Editor *Deseret News*. Sir: . . . Work is being vigorously prosecuted on the U.P.R.R. and C.P.R.R., both lines running near each other and occasionally crossing. Both companies have their pile drivers at work where the lines cross the river. From Corinne west thirty miles, the grading camps present the appear-



Owl Cap Cut near Blue Canyon on the Central Pacific, photographed in 1866 when the first railroad was being built over the Sierra Nevada Mountains. When it was possible, the grading through cuts was done by starting on three or four levels so that workers would not interfere with each other.

ance of a mighty army. As far as the eye can reach are to be seen almost a continuous line of tents, wagons and men.

Junction City, twenty-one miles west of Corinne is the largest and most lively of any of the new towns in this vicinity. Built in the valley near where the lines commence the ascent of the Promontory, it is nearly surrounded by grading camps, Benson, Farr and West's headquarters a mile or two southwest. The heaviest work on the Promontory is within a few miles of headquarters. Sharp & Young's blasters are jarring the earth every few minutes with their glycerine and powder, lifting

whole ledges of limestone rock from their long resting places, hurling them hundreds of feet in the air and scattering them around for a half mile in every direction

The C. P. have about two-thirds of their heavy work done at this place, while the U. P. have just got under good headway. In other places the grade of the U. P. is finished and the C. P. is just beginning, so taking it "all in all" it is hard to say which company is ahead with the work. The supposition is the two companies will meet somewhere on the Promontory, but it's my opinion that "nobody" don't know nothing about it. One thing certain, both parties are doing their "dirty best," and within sixty days they will meet somewhere — if they don't run off the track. The C. P. have 20,000 Chinamen and the U. P. an everlasting avalanche of Irishmen — only think how they will affectionately weep over each other's shoulders and the wrongs of their country when they do come together.

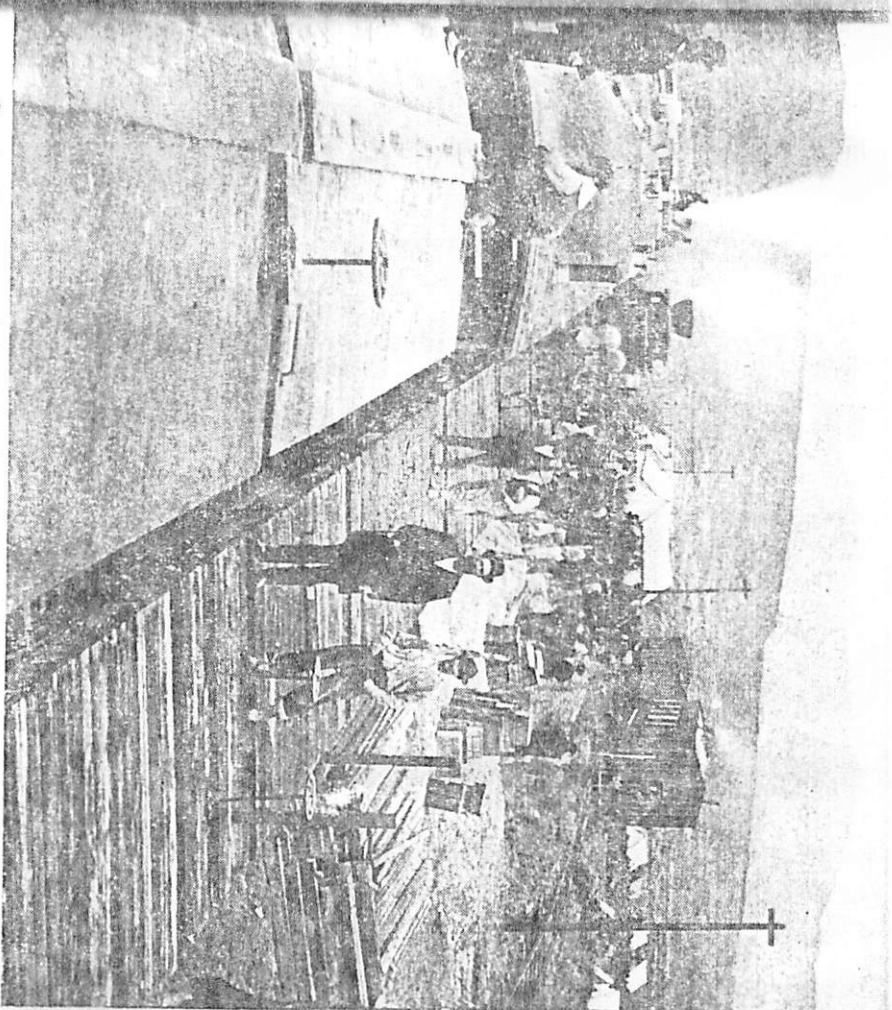
Several dance houses are now in full blast, astonishing the natives, (I am told the Indians can't compete with them in price) by the manner in which they are developing the resources of the Territory. I will venture the assertion that there is not less than three hundred whisky shops between here and Brigham City, all developing the resources of the Territory, and showing the "Mormons" what is necessary to build up a country and make it self-supporting and permanent.

There are many heavy contractors on the Promontory, but the heaviest firm I have heard of is named "Red Jacket." I notice nearly every wagon that passes has a great many boxes marked with his name. Every railroad contractor has more or less business with engineers, they are the "fellows" that fix up your estimates and let you know whether you are making money or losing some that you never had. As engineers are not too numerous on the road, I will remark for the benefit of contractors that there is about two hundred and fifty in one drove near Connor Springs, east of Junction city. They belong to the Shoshone persuasion, and have twice as many Ingin-cars as there is Ingins.

Times are very lively, the roads are literally lined with footmen seeking employment, grass is splendid and in abundance for animals, the weather is delightful, and I have nothing further to communicate.

THE RACE TO PROMONTORY

The eastern road entered Utah by December 1868 and in a few weeks the Central Pacific entered the state from the west. During the winter of '68 and '69 there was a great deal of interest and speculation as to where the junction of the roads would finally take place. *The Salt Lake Telegraph* of February



Construction camp of the Central Pacific Railroad in Utah, April, 1869.

1868 noted: "The Union Pacific being now only 20-30 miles east of Ogden, thinks it ought to construct a road westward to the Promontory." The Central Pacific now about 200 miles west of Ogden thinks it ought to construct a road eastward to the last named point, and thus make the junction of the Union Pacific and Central Pacific at Ogden. Yet it continues that there is talk that if no compromise can be worked out, that each railroad would continue to build on to the Pacific Coast in the case of the Union Pacific, and the Atlantic Coast in the case of the Central Pacific." This attempt at jest on the part of the newspaper became something more than humorous, for since no governmental decision regarding a junction point had been forthcoming, the two roads met and paralleled their grades for miles, sometimes no more than 100 feet apart, each com-

pany apparently hoping to claim as much of the federal subsidy as possible.

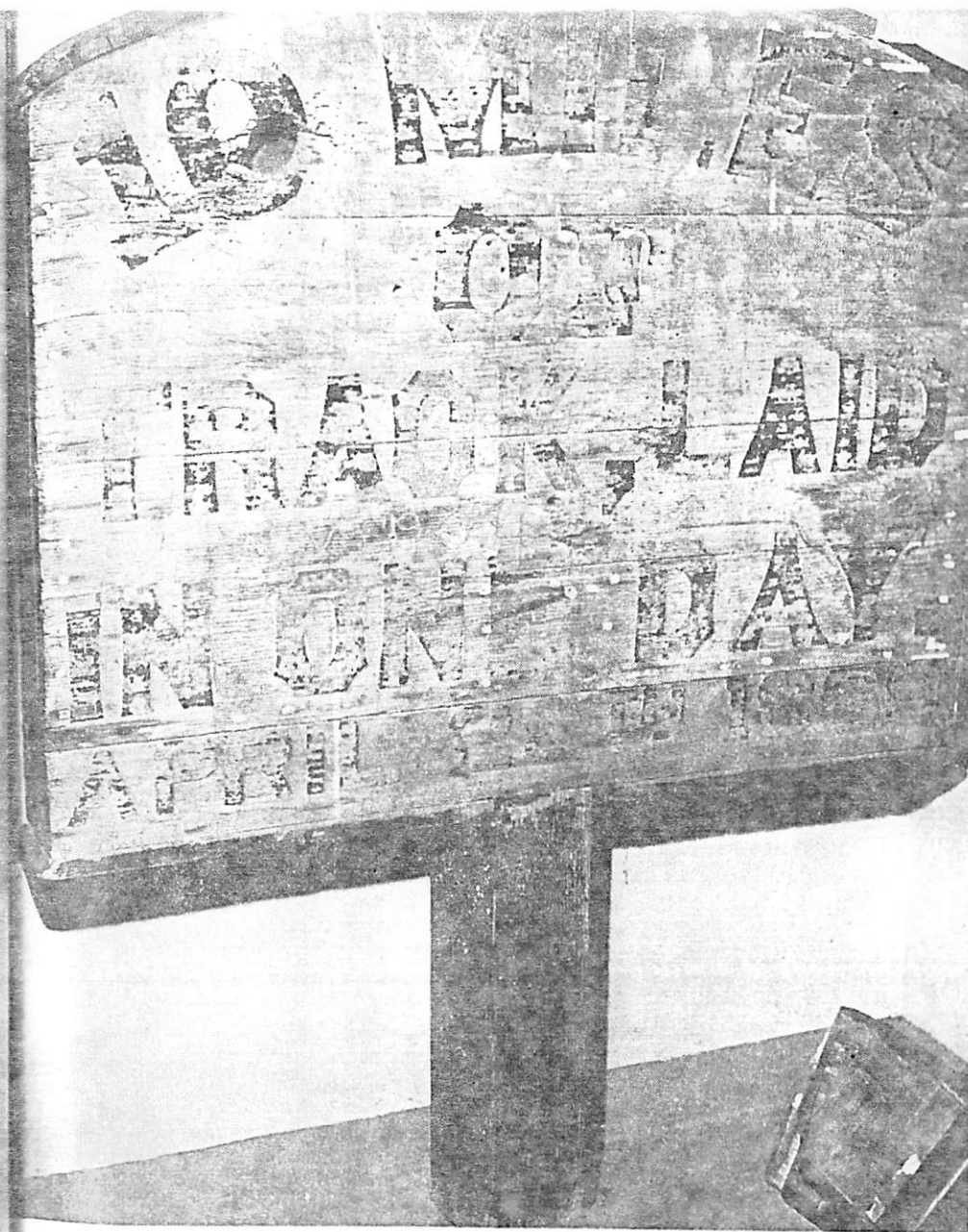
Finally the two roads were forced to connect as a result of a decision reached in Washington D. C. between C. P. Huntington and Grenville Dodge. On April 9th it was decided the connection point would be at Promontory Summit, the Central Pacific to buy 47 miles from the Union Pacific. The point was 1,086 miles west of Omaha and 690 from Sacramento.

Now began the great race to lay the rails to Promontory, both the east and west officials nagging their contractors for more speed. The following information, taken from Crofutt's *Overland Tourist and Pacific Coast Guide*, declares that on the south side of the track four miles west of Promontory could be seen the signboard which stated: "Ten Miles of Track in One Day." (This same sign, weatherbeaten but with printing clearly readable, reposes today in the Daughters of Utah Pioneers Memorial Museum.)

These boards mark the track which was laid by the track layers of the Central Pacific Company in one day, under the immediate charge of J. H. Strobridge, Superintendent of Construction, H. H. Minkler, track layer, and James Campbell, Superintendent of Division.

During the building of the road, a great rivalry existed between the two companies as to which could lay the most track in one day. This rivalry commenced early in the year 1868. The "Union" laying six miles; soon after the "Central" laid seven miles, and then again the "Union" seven and a half miles. The "Central" men, not to be outdone, announced that they could lay ten miles in one day. Mr. Durant, Vice-President of the "Union" offered to bet \$10,000 that it could not be done, and the "Central" resolved it should be done. Consequently, on the 29th day of April, 1869, when only fourteen miles of track remained to be laid to meet the "Union" at Promontory Point, and in the presence of many prominent men from the East and West, and a committee from the "Union" to note the progress, the work commenced.

When the car loaded with rails came to the end of the track, the two outer rails on either side were seized with iron nippers, hauled forward off the car, and laid on the ties by four men who attended exclusively to this. Over these rails the car was pushed forward, and the process repeated. Behind these men came a gang of men who half-drove the spikes and screwed on the fish-plates. At a short interval behind these came a gang of Chinamen, who drove home the spikes already inserted and added the rest. Behind these came a second squad of Chinamen, two deep on each side of the track. The inner men had shovels, the outer ones picks. Together, they ballasted the track. The



Original sign noting the laying of 10 miles of track April 29, 1869.
Daughters of Utah Pioneers Museum.

under the immediate direction of Engineer J. Fewson Smith. Some thirty-four bridges are to be put up from the first crossing to the mouth of the canyon; all the masonry to be of first-class work. The quarry and masonry is under contract and prosecution by Messrs. Warner & Whitman. A handsome station-house has been erected at the head of Echo, or Castle Rock. The heavy fill at this point is to be completed by Messrs. Carmichael & Co. and Hill & Green, having been relinquished by Warner & Whitman. A line of severe snow squalls was crossed while running up Echo last night

—Edward L. Sloan

ECHO CANYON

At the head of great Echo, there's a railroad begun,
And the Mormons are cutting and grading like fun;
They say they'll stick to it until it's complete,
For friends and relations are longing to meet.

Chorus

Hurrah! Hurrah! the railroad's begun,
Three cheers for our contractor his name's Brigham Young,
Hurrah, hurrah! We're honest and true;
And if we stick to it, it's bound to go through.

Now there's Mister Reed, he's a gentleman too,
He knows very well what the Mormons can do;
He knows in their work they are lively and gay,
And just the right boys to build a railway.

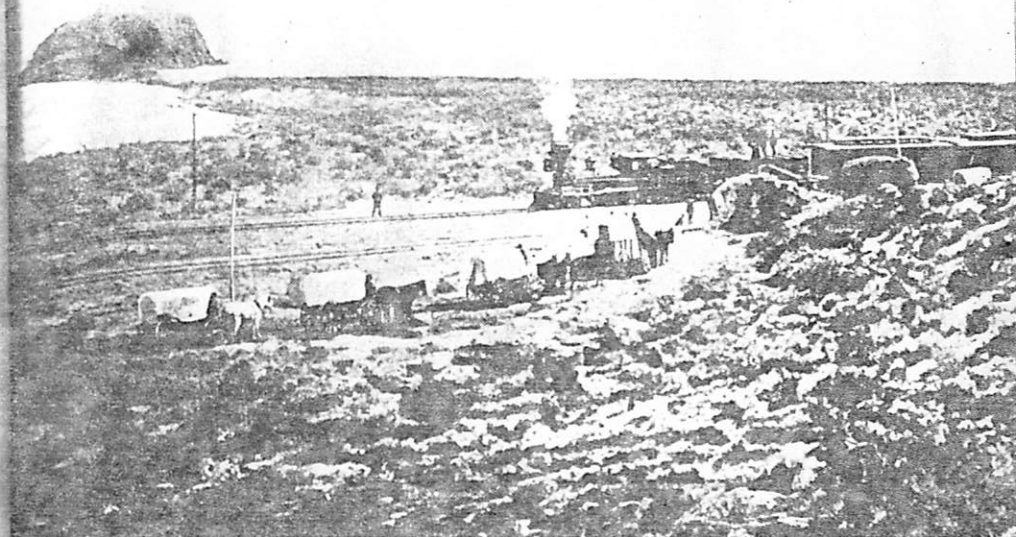
Our camp is united we all labor hard,
And if we work faithfully we'll get our reward;
Our leader is wise and industrious too,
And all things he tells us we're willing to do.

The boys in our camp are light-hearted and gay,
We work on the railroad ten hours a day;
We're thinking of the good times we'll have in the fall,
When we'll take our ladies, and off to the ball.

We surely must live in a very fast age,
We've travelled by ox teams and then took the stage,
But when such conveyance is all done away,
We'll travel in steam cars upon the railway.

The great locomotive next season will come,
To gather the saints from their far distant home,
And bring them to Utah in peace here to stay,
While the judgments of God sweep the wicked away.

(Song composed by workmen)



Covered wagons meet Gov. Stanford's train.

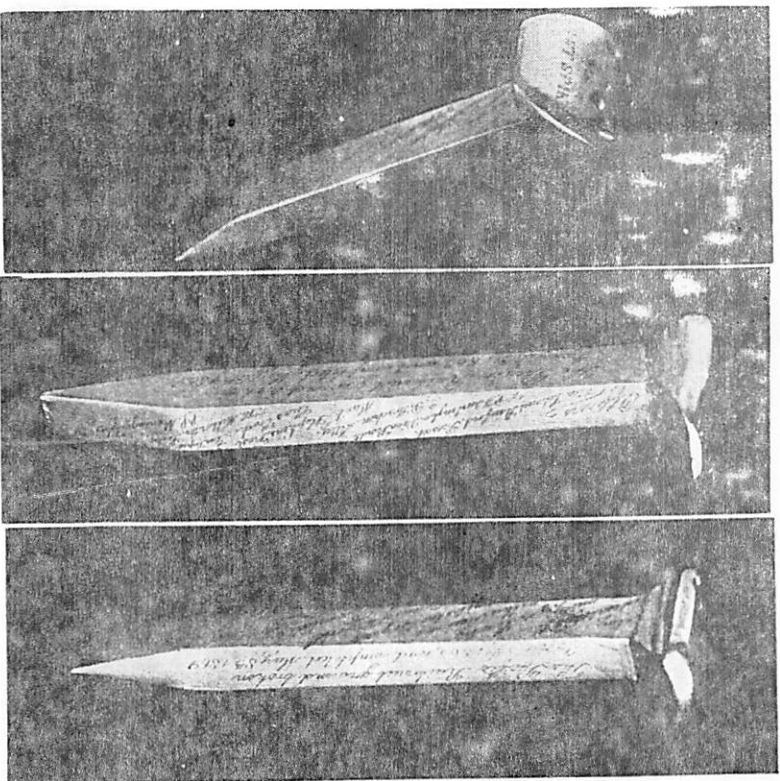
THE GOLDEN SPIKE

The ceremony for the joining of the rails was set for May 10, 1869. Governor Stanford had left Sacramento on Thursday in a special train. About 12 hours later, the locomotive crashed into a tree on the tracks, an accident which shattered the front end of the engine but injured no one. In Wadsworth, Nevada, the Governor's plush private car was transferred to another engine, No. 60, the *Jupiter*.

Similarly, Union Pacific's engine No. 119, *The Pride of the Prairies*, was delayed by bad weather conditions. Both were on hand, however, for the impressive ceremonies, and they made a thrilling picture as they stood nose to nose on the windy Promontory hillside.

The funnel-stacked, wood-burning *Jupiter*, made by the Schenectady Locomotive Works of New York, although more powerful, was little changed from Stevenson's engine of 1829 and contrasted sharply with the straight-stacked, coal-burning No. 119, a creation of the Rogers Locomotive and Machine Works of Patterson, New Jersey. Yet both were products of 1868 and were destined to become famous.

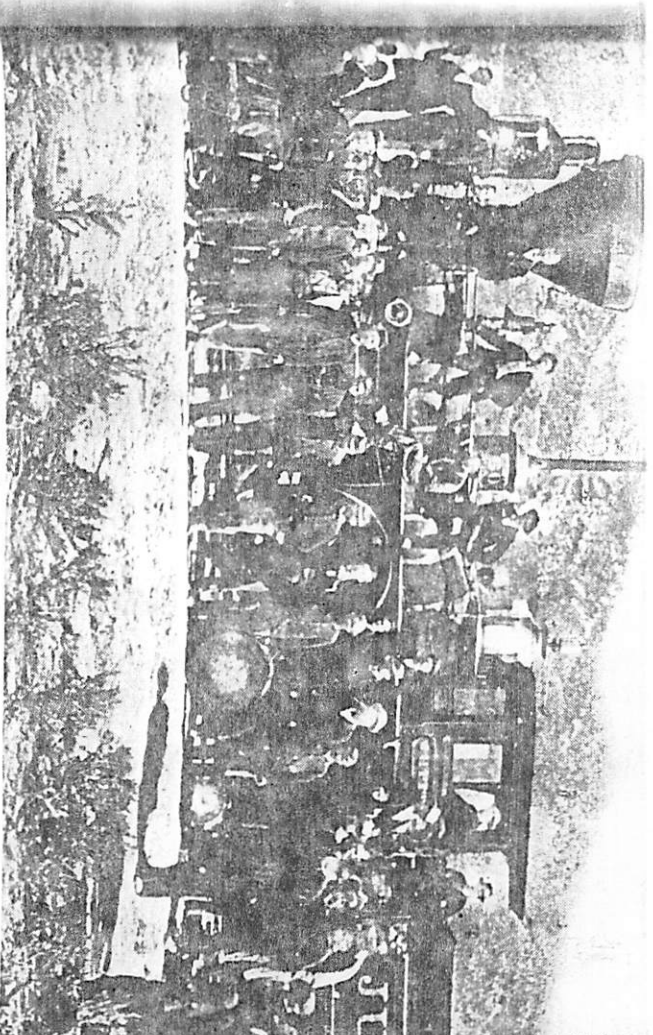
After the final 50-foot gap had been closed with the exception of one tie and one rail length, it was decided that Strobridge and Samuel B. Reed would set the tie in place, the Central Pacific's Chinese tracklayers would set one rail, and the Union Pacific Irishmen would set the other.



The Last Spike.

The gold spike, a gift of David Hewes of San Francisco, was about seven inches long and was made from twenty-three twenty dollar gold pieces worth \$460.00.

The day became one of United States history's most important dates as the workers of the Union Pacific and Central Pacific railroads gathered to await the arrival of officials of the two railroads, the completion of track, and the driving of the Golden Spike. In addition to the railroaders, other residents of the railway camps were converging to witness the completion of the building of the railroad. Soon after the work trains delivered their passengers, a Central Pacific special, bringing excursionists from Sacramento, pulled in. This was followed shortly by the arrival of two trains from the east, via Union Pacific, and the fourth passenger train of the day was the special bearing Governor Leland Stanford of California, president of the Central Pacific. Governor Stanford and his group went over to Durant's car, one of the most elegant walnut masterpieces



Driving of the Golden Spike Ceremonies at Promontory, Utah, on May 10, 1869. Bandsmen of the 21st Infantry from Fort Douglas, Utah, pose alongside the pioneer woodburning locomotive "Jupiter" of the Central Pacific. Four companies of troops participated in the historic event that marked the completion of the nation's first Transcontinental Railroad.

of the day, and the two parties shook hands all around, accompanied by the shouts of those assembled.

The air was electric with excitement, and tension mounted as the men — and the few women present — realized the hopes and struggles of thousands over a period of years were nearing completion. The crowd had grown to about 1,500, including four companies of the Twenty-first Infantry, commanded by Major Milton Cogswell. With the military came the headquarters band from Camp Douglas, Salt Lake City. Accompanying the Union Pacific group were a large number of Utahns including the Tenth Ward band, resplendent in the gayest of uniforms.

Utah pioneer photographer, C. R. Savage, was there. We include excerpts from his diary:

May 10, 1869 — Today the ceremony of uniting the ends of the tracks took place. I worked — all day and secured some nice views connected with laying the last rail. Everything passed off lively and the weather was delightful. Saw but little of the actual driving of the gold spike — and laying of the laurel tie — as I was very busy.

May 18, 1869 — My Promontory views took first rate. Our sales for views have mounted to \$125.00 in three days.

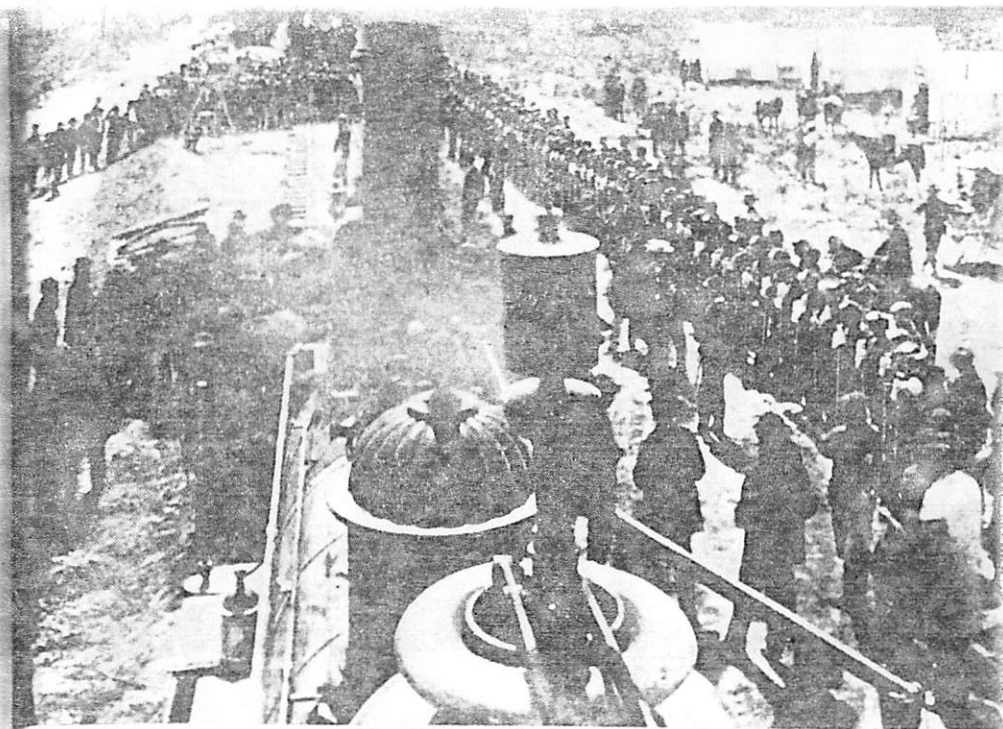
Brought to the scene in Governor Stanford's private car were the world-famous Golden Spike, the last spike to be driven in the building of the railroad, and the "last tie," into which this spike and several others of precious metal were driven.

At the tip of the spike was a gold nugget, roughly the size of the last spike itself. This was broken off and later made into souvenirs of the ceremony, tiny golden spike watchfobs and rings which were presented to *Oliver Ames*, Union Pacific president; *Governor Stanford*; *President U. S. Grant*; and *Secretary of State William H. Seward*. On the head of the last spike was inscribed the legend *The Last Spike*; on one side, *The Pacific Railroad*; *Ground Broken January 8, 1863*; *completed May 10, 1869*; on another side, "*May God continue the unity of our Country as this Railroad unites the two great Oceans of the world*;" on the third side, *Presented by David Hewes, San Francisco*; and on the fourth, the names of the company officers.

The last tie, which was eight feet long, eight inches wide and six inches thick, was of highly polished California laurel. It was bound with silver and bore a silver plate seven inches long and six inches wide, inscribed with the date of completion of the railroad and the names of the Central Pacific directors. It was presented to Stanford by *West Evans*, tie contractor for the Central Pacific.

When Stanford's special had pulled up to the scene, Chinese laborers from the Central's construction outfits had begun leveling the ground in the gap, preparing it for the last tie and the joining of the iron. On orders from *W. B. Hibbard*, Western Union superintendent, wires from the nearest telegraph pole had been run down to a special operator's kit on a little four-legged table beside the gap. *W. N. Shilling*, of the telegraph company's Ogden office, sat there ready to dispatch a blow-by-blow description of the ceremony to the waiting nation. A silver-headed spike maul which was to be used in driving the final spikes had been wired so its blows would activate a telegraph key and they would be tapped across the nation, proving what was probably the United States' first nationwide "hookup."

As the Chinese, working on this special occasion in clean frock coats, carried the last rail into the gap and prepared to lay it, an event took place which epitomized the life the construction crews had led. When the Chinese moved into place with their last rail, a man with a camera shouted: "Now's the time, take a shot!" The Mongolians knew very little English, but were thoroughly acquainted with "Shoot" in all its tenses. They heard the word and saw the camera pointing toward them, dropped the rail and scrambled for cover, to the delight of the crowd and the consternation of the officials; but after a few minutes of animated conversation they were coaxed back and the ceremony



The Golden Spike Ceremony.

proceeded. The telegrapher had been tapping out messages to impatient inquirers from throughout the country; "To everybody: Keep quiet. When the last spike is driven at Promontory, we will say, 'Done.' Don't break the circuit but watch the signals of the blows of the hammer." The crowd had been cleared from the south side of the gap and asked to stand back so all might see.

Just before noon General Dodge, who had been conferring with Edgar Mills, Sacramento banker chosen to act as master of ceremonies, lifted his hand for silence and introduced the Rev. Dr. John Todd of Pittsfield, Mass., who led the prayer which formally opened the ceremony. The telegrapher, Wm. Shilling, tapped out: "Almost ready. Hats off;" a silence followed as the prayer ensued . . . And then the telegrapher tapped: "We have done praying, the spike is about to be presented." Chicago replied: "We understand, all are ready in the East."

This was bulletined at 2:27 p.m. eastern time, in Washington, which would have been within a few minutes of 12:30 p.m. Promontory time. All Western Union wires had been cleared for Promontory news and now as each event took place crowds

at telegraph offices in all parts of the country were apprised of the fact.

The spikes had been brought forward and F. A. Tritle of Nevada, a commissioner of inspection, presented a spike of silver made from the Comstock lodes, to Dr. Durant. Governor Anson P. K. Safford, of Arizona, added a spike of gold, silver and iron alloy. Idaho and Montana furnished spikes of silver and gold, and Hewes' Golden Spike, Evans' laurel tie were presented as California's contribution.

Speeches were made by Governor Stanford and others, and the crowd cheered each sentence, then cheered for the Star Spangled Banner, the Pacific Railway, the officers, the men who raised the money, the laborers and the engineers who located the routes.

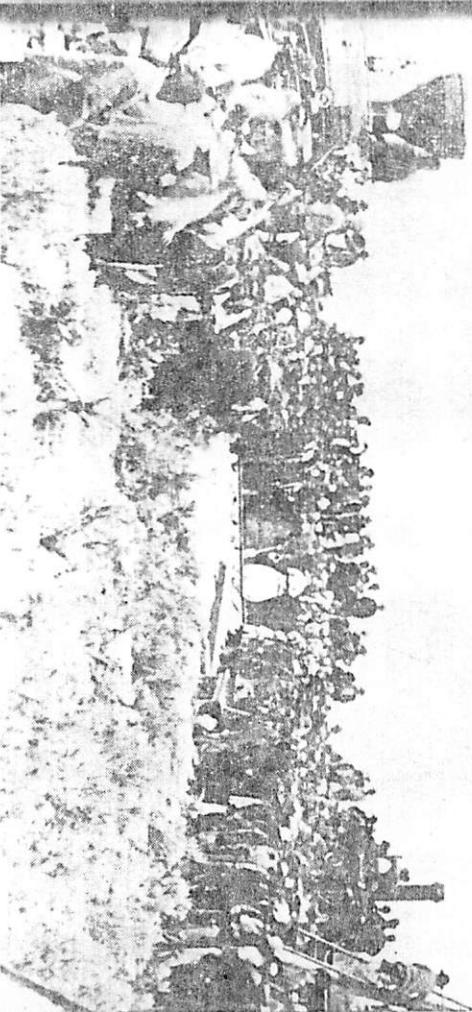
The telegrapher clicked off: "All ready now; the last spike will soon be driven. The signal will be three dots for the commencement of the blows." The silver and alloy spikes had been set into holes prepared to receive them and driven by guests. Dr. Durant then was invited to drive Nevada's silver spike.

The last spike remained untouched. Governor Stanford was to have the privilege of signalling the waiting world that the great moment had come. He stepped forward and, plainly nervous, took the silver-headed maul, inconvenienced by the dangling wires. A hush fell over the crowd and the president of the Central Pacific swung his maul. He missed! The maul struck the rail but the telegrapher signalled, 'Dot! Dot! Dot! — Done!'

In San Francisco the wires were connected with the fire alarm in the Tower, in Washington with the bell of the Capitol, so that the message echoed from coast to coast and announced the wedding of the Atlantic and the Pacific. After striking his blow Governor Stanford politely stood aside and handed the maul to Dr. Durant, who, also polite, imitated the Governor's blow and struck the rail. After that, various guests were invited to tap the spike and it dropped into the hole which had been bored for it.

Flashed to the Associated Press and to President Grant was the official announcement:

THE LAST RAIL IS LAID! THE LAST SPIKE IS DRIVEN! THE PACIFIC RAILROAD IS COMPLETED! THE POINT OF JUNCTION IS 1,086 MILES WEST OF THE MISSOURI RIVER, AND 690 EAST OF SACRAMENTO CITY. LELAND STANFORD, CENTRAL PACIFIC RAILROAD



C. R. Savage's photograph of the ceremony.

The two engines, Jupiter and The Pride of the Prairies, were unhooked from the trains and covered with cheering celebrants, advanced until their pilots touched, bottles of champagne were broken on them and the bubbling wine flowed down over the Golden Spike and the last tie. The engines backed up to their trains, hooked on and took turns crossing the rails which had joined the gap. The crowd, in the words of one who was there, "Was yelling fit to bust!"

The nation's first transcontinental rail line was in existence!

Crews from both the Union and Central Pacific now rushed in, removed the precious spikes and the tie, replacing them with regular materials, but the new tie soon was reduced to splinters by souvenir hunters, as were half a dozen more — and two rails — in the next six months.

And then the Golden Spike was returned to California as was the last tie which was destroyed in the fire and earthquake which devastated San Francisco in April, 1906. On the day following the driving of the last spike, the first train in transcontinental service passed Promontory, having left the Missouri River several days previously. Another train had started from

the west coast a few days before and soon would pass Promontory going east.

CELEBRATION AT SALT LAKE CITY

Although Brigham Young had long awaited the completion of the Pacific Railroad, as has been noted, he was destined to be absent when the final spike was driven. In Roberts' *History of the Church* is found the following:

It will be observed that in these ceremonies Utah was not represented by her governor — at that time Charles Durkee — nor by President Brigham Young. The reason for this was that his excellency had been absent from the territory in the east during the first half of 1869, returning to Salt Lake City just on the eve of the junction celebration, but not in time to be present; although he attended the celebration at Salt Lake City, held simultaneously with the celebration at Promontory Summit.

President Brigham Young, soon after the close of the annual April conference of the Church, had started on a visit to the settlements of southern Utah, going as far as St. George. From this journey he did not return until after the junction ceremonies both at Promontory Summit and in Salt Lake City were over, and for this reason could not be present. However, referring to Brigham Young and his connection with this national enterprise, John Taylor, in a letter to the *Deseret News*, very justly said:

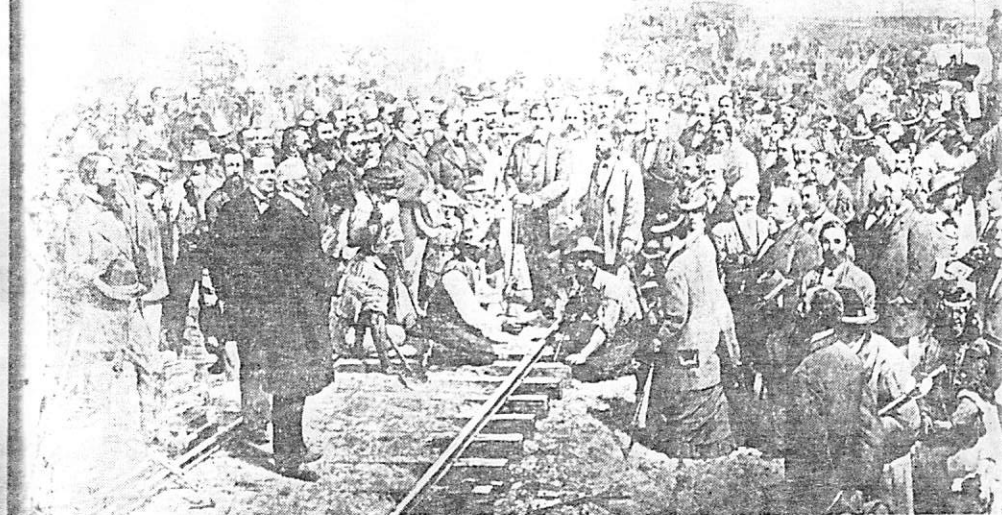
Nor in our list must we forget President Brigham Young, who has shouldered the heavy end of the burden, and who when asked to assist, said, "Point out the path and we will tear down the rocks, pierce the mountains, fill up the valleys, and make a pathway for the 'iron horse.' . . ."

In the public celebration held in Salt Lake City simultaneously with the one at Promontory, the governor of the territory, Utah's delegate to Congress, — Hon. Wm. H. Hooper — members of the Salt Lake City council, a number of leading Church officials, among them George A. Smith, John Taylor and Edward Hunter, participated in the proceedings over which Judge Elias Smith presided. (End of quote.)

Most of the communities in the territory held celebrations. Typical is the following from St. George, via the *Deseret News*:

We glean, by a telegraphic dispatch dated St. George, May 10th, the following particulars of how "the event" was celebrated in our "Dixie:"

"At thirty-three minutes past noon the telegraph line flashed the word to this city that the connecting rail of the trans-continental railroad was being laid by Governor Stanford. From information received this morning the ecclesiastical, civil and



Key to the Portraits in this painting by Thomas Hill in 1881.



- | | | |
|-----------------------|----------------------------|---------------------------|
| 1. Stephen T. Gage | 24. Thomas P. Durant | 48. Hon. Milton S. Latham |
| 2. A. P. Stanford | 25. Dr. J. D. B. Stillman | 49. Mark Hopkins |
| 3. F. A. Tritle | 26. Dr. H. W. Harkness | 50. Miss Earl |
| 4. Hon. John Conness | 27. Col. Little | 51. Mrs. S. B. Reed |
| 5. C. N. West | 28. Mrs. J. H. Strobbridge | 52. Judge E. B. Crocker |
| 6. Benjamin Welch | 29. F. L. Vandenberg | 53. Charles Crocker |
| 7. E. F. Gerald | 30. Leland Stanford | 54. S. S. Montague |
| 8. J. R. Watson | 31. H. Nottingham | 55. T. D. Judah |
| 9. Rev. Dr. Todd | 32. C. P. Huntington | 56. L. M. Clement |
| 10. James W. Haynes | 33. S. B. Reed | 57. Eli Dennison |
| 11. E. H. Miller, Jr. | 34. F. D. Richards | 58. Col. T. H. Head |
| 12. Arthur Brown | 35. P. McGrupe | 61. A. P. K. Safford |
| 13. Robert Robinson | 36. John Duff | 62. B. B. Redding |
| 14. Bishop J. Sharp | 37. T. P. Woodward | 63. Charles Cadwalader |
| 15. Wm. Sherman | 38. J. R. Adams | 64. Adolph Steiner |
| 16. Charles Marsh | 39. Oakes Ames | 65. S. W. Sanderson |
| 17. David Hewes | 40. Judge Galwood | 66. A. N. Towne |
| 18. Lorenzo Sawyer | 41. J. H. Strobbridge | 67. Geo. E. Gray |
| 19. E. Black Ryan | 42. Sidney Dillon | 68. John Casement |
| 20. Mrs. E. B. Ryan | 44. Gen. Cogswell | 69. Hon. T. G. Phelps |
| 21. Bishop L. Farr | 45. George F. Parsons | 70. Capt. Franklin |
| 22. John Corning | 46. Edgar Mills | 71. Hon. A. A. Sargent |
| 23. W. E. Brown | 47. Gen'l. Geo. W. Dodge | |

military authorities and the people were on the *qui vive*, and immediately on receipt of the welcome intelligence, greeted it by unfurling the Stars and Stripes, salutes by the artillery and music by the brass and martial bands; after which eloquent speeches were delivered by President Erastus Snow and Jacob Gates. Even while we write, the concluding hearty cheers of the assembled people are making our red hills ring. The committee were Messrs. Richard Bentley and Joseph Birch."

THE COST

Much has been written of the cost of the transcontinental railroad. It is noted that about 300,000 tons of iron rails, 1,700,000 fish plates, 7,000,000 bolts, over 6,000,000 cross-ties, and 23,500,500 spikes were used. There were millions of feet of sawed lumber boards for building, timber for trestles, bridges, camps to house the builders. Estimating the cost of the road, excluding the labor, we conclude the sum of approximately \$187,000,000 was spent in other materials. From Crofutt's *New Overland Tourist*, published in 1874, we present the following:

The Hon. Henry Wilson, from Mass., speaking at the 2nd session of the 37th Congress said:

"I give no grudging vote in giving away either money or land. I would sink \$100,000,000 to build the road, and do it most cheerfully, and think I had done a great thing for my country. What are \$75,000,000 or \$100,000,000 in opening a railroad across the central regions of this Continent, that shall connect the people of the Atlantic and Pacific, and bind us together? Nothing. As to the lands, I don't grudge them."

Nine years later — after the road had been completed nearly two years — Senator Stewart, from the committee on the Pacific railroad, said in his report to the U.S. Senate:

"The cost of the overland service for the whole period — from the acquisition of our Pacific coast possessions down to the completion of the Pacific railroad — was over \$8,000,000 per annum, and this cost was constantly increasing.

"The cost, since the completion of the road, is the annual interest — \$3,897,129 — to which must be added one-half the charges for services performed by the company, about \$1,163,138 per annum, making a total expenditure of about \$5,000,000, and showing a saving of at least \$3,000,000 per annum. This calculation is upon the basis that none of the interest will ever be repaid to the United States, except what is paid by the services, and that the excess of interest advanced over freights is a total loss.

"In this statement no account is made of the constant destruction of life and property by Indians; of the large amounts of money paid by the Secretary of the Treasury as indemnity



Monument at Promontory.

for damages by Indians to property in the Government service on the plains, under the act of March 3, 1849; of the increased mail facilities, of the prevention of Indian wars, of the increased value of public lands, of the development of the coal and iron mines of Wyoming, and the gold and silver mines of Nevada and Utah; of the value of the road in a commercial point of view in utilizing the interior of the continent, and in facilitating trade and commerce with the Pacific coast and Asia; and, above all, in cementing the Union and furnishing security in the event of foreign wars."



At Promontory Summit, Utah, the "Rival Monarchs" nuzzled up to one another as hundreds cheered the completion of the transcontinental railroad line. The date was May 10, 1869.

celebration on May 10, 1869, at Promontory Summit, a few miles west of Ogden, Utah.³ Two trainloads of dignitaries, one from the East and one from the West, approached the joining place of the rails. By telegraph, President Ulysses S. Grant gave the signal from Washington to drive in the last spike. The hammer blows that drove home the golden spike were echoed by Mr. Morse's telegraph to waiting throngs on both coasts. The hope was expressed that the

³By some strange quirk of historical writing, the meeting place of the two trains is usually designated Promontory Point. Leonard Arrington, a resident of the area, assures us that Promontory Point extends well into the Great Salt Lake, where a railroad track would be most unlikely to be built, and that the 1869 news dispatches were filed from Promontory Summit.